

Alaska Peninsula and Aleutian Islands Management Area
Herring Sac Roe and Food and Bait Fisheries
Annual Management Report, 2001

By

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ABSTRACT

The 2001 commercial Pacific herring *Clupea pallasii* sac roe fishery remained closed in South Alaska Peninsula and Aleutian Islands waters due to a lack of industry interest in harvesting herring in this area. During 2001, observed herring biomass on the North Peninsula was above the 1,000 ton threshold required by the department to allow a commercial fishing period, but the fishery remained closed due to a lack of industry participation.

Biomass estimates from aerial surveys in 2001 were documented for the North Peninsula in Herendeen Bay (335 tons) and Port Moller (1,980 tons). There were no reports to the department of industry-conducted surveys in 2001.

In 2001, commercial herring food and bait fishery harvests occurred in the Aleutian Islands during both gillnet and seine gear fishing periods. The Alaska Peninsula and Aleutian Islands Area "Dutch Harbor" herring food and bait gillnet harvest was 107 tons of a 110 ton allocation and the seine fishery harvest was 1,332 tons of a 1,462 ton allocation. The price per ton for the fisheries ranged from \$300 to \$500, with a combined exvessel value of approximately \$460,000.

KEY WORDS: Alaska Peninsula, Aleutian Islands, herring, harvest, age, length, weight, sex, sac roe, food, bait

INTRODUCTION

The goals and objectives of this report are to present: (1) historical information pertaining to Alaska Peninsula and Aleutian Islands Management Area Pacific herring *Clupea pallasii* fisheries; (2) information from the commercial harvest in the Alaska Peninsula and Aleutian Islands Management Area during 2001; (3) estimates of the age, sex composition, and mean length and weight of herring harvested in Alaska Peninsula and Aleutian Islands commercial herring fisheries; and (4) biomass estimates of herring within the management area. This information helps the department evaluate harvest rates, recruitment events, and refine management of these fisheries. This report is intended as a reference document; interpretation and discussion of the data are therefore limited.

Alaska Peninsula

The Alaska Peninsula and Aleutian Islands Herring Management Area is described as Management Area "M" and is divided into three subareas; (1) the North Peninsula, consisting of Bering Sea waters extending west from Cape Menshikof to Cape Sarichef; (2) the South Peninsula, consisting of Pacific Ocean coastal waters extending west of Kupreanof Point to 163°30' W long. (the south side of Unimak Island near Cape Lazaref); and (3) the Aleutian Islands, consisting of Bering Sea waters extending west of Unimak Pass and Pacific Ocean waters extending west from 163°30' W long. (the south side of Unimak Island near Cape Lazaref) to the International Date Line (Figures 1-8).

The North Peninsula is composed of three districts and 23 statistical areas (Figures 5-7), the South Peninsula includes three districts and 45 statistical areas (Figures 5 and 8), and the Aleutian Islands includes five districts and 41 statistical areas (Figure 3).

Herring have been reported throughout North and South Peninsula waters, and in Unalaska Island and Adak Island waters of the Aleutian Islands. In the past, major concentrations of herring have been documented (Table 9) and herring sac roe fishing effort has occurred in North Peninsula waters of Port Heiden, Port Moller, and Herendeen Bays, and along the Bering Sea coast in nearshore waters from Entrance Point to Cape Seniavin (Table 10). Herring sac roe fishing typically begins in late May in both North Peninsula and South Peninsula waters and ends in mid to late June. In South Peninsula waters, most herring sac roe fishing effort occurs in the Shumagin Islands, and Stepovak, Pavlof, and Canoe Bays (Table 8). Herring sac roe fishing has also occurred later in the season between Dolgoi Island and Lenard Harbor.

From 1981-1995, the Alaska Department of Fish and Game (ADF&G) collected harvest data and monitored the commercial herring sac roe fishery utilizing field crews in many locations on the Alaska Peninsula including Stepovak Bay, Canoe Bay, and Port Moller. Crews also collected herring samples, documented spawn areas, and mapped spawning substrate. Department personnel have conducted aerial surveys for herring in Alaska Peninsula waters since 1976. These surveys have provided limited information primarily due to the large area involved, poor weather conditions, budget constraints, turbidity of the water, and the sporadic and unpredictable arrival of

the herring. Because of these limitations, the management staff believes the surveys flown in 1989, 1991, and 1992 provide the best estimates of the total spawning biomass in North Peninsula waters.

North Peninsula

The first commercial harvests of herring for sac roe in North Peninsula waters occurred in 1982 when 505.5 tons were harvested (Table 1). From 1991-2000, the harvests ranged from 0 to 3,969 tons and averaged 640.9 tons during the North Peninsula herring sac roe fishery. Since 1982, the majority of the harvest has been taken from Herendeen Bay and Port Moller except in 1986, 1989, and 1998 when most of the harvest was taken on the Bering Sea coast between Entrance Point and Cape Seniavin (Table 2) and in 1992, when over 40% of the North Peninsula harvest came from Port Heiden.

Prior to 1982, fishing vessels destined for, or returning from, the Togiak herring fishery frequently surveyed for herring in the Port Moller and Port Heiden Districts, but no harvest occurred. During the 1986-1988 seasons, an average of 52 vessels were present in the Port Moller District, but only a few permit holders actually harvested herring. Starting in 1986, fishing effort increased, targeting the earlier arriving (May) biomass. From 1989-1990, the department delayed the opening of the Port Moller District until May 30 in an attempt to shift fishing pressure from the earlier arriving to the later returning more abundant herring. The later opening date coincided with a trend of decreasing effort (Table 10), and fishers returning from Togiak tended to pursue halibut or salmon fisheries rather than wait for the Port Moller herring fishery to open. The Port Moller District opened prior to May 30 from 1991-1995 and again in 1998 because the herring biomass was sufficient to warrant commercial harvests.

South Peninsula

The South Peninsula herring sac roe fishery harvest and fishing effort has fluctuated since it began in 1979 (Table 1). During years in which commercial herring sac roe fishery harvests occurred in the South Peninsula (1979-1996), landings have been reported from 18 geographical locations. Of these, only Canoe Bay produced a consistent annual harvest (Table 3, Figure 8).

In South Peninsula waters, substantial harvest occurred in 1980 (453.8 tons), and harvest peaked in 1981 (797.6 tons, Table 1). The Alaska Board of Fisheries (BOF) closed the South Peninsula herring sac roe fishery in 1983, and changed the fishery to a winter herring food and bait fishery that, due to a lack of herring biomass in Stepovak Bay waters, failed to develop. From 1984-1991, the BOF allocated the harvest between the sac roe fishery (75% of the allowable harvest) and the food and bait fishery (25% of the allowable harvest). In 1992, the BOF allocated the entire harvest to the herring sac roe fishery (Connolly and Murphy 2001).

From 1981-2000, the effort levels and harvests generally decreased in South Peninsula waters. Many bays may have small harvestable quantities of herring but the cost of having fishing vessels, tenders, and airplanes available to harvest each section's guideline harvest level (GHL) has discouraged fishers. Since 1997, no herring have been harvested in South Peninsula waters primarily because of a lack of industry participation.

Aleutian Islands

The Aleutian Islands herring food and bait season is established by regulation and extends annually from June 24 through February 28. Actual fishing time is established by emergency order (Appendix A) and is based on in-season evaluation of the observed biomass, effort levels, and harvest (Table 4). All districts from the Unimak District west to the Adak District may open by regulation, however open areas during the seine fishery have been limited to the vicinity of Unalaska and Akutan Islands. The department has implemented these area limitations while considering processing capabilities, herring concentrations, and logistical concerns with managing the fishery (Figure 2-4). Three management plans: (1) the Bering Sea Herring Fishery Management Plan (Appendix B; 5 AAC 27.060) (2) the Bristol Bay Herring Management Plan (5 AAC 27.865) and (3) the Alaska Peninsula and Aleutian Islands Management Area Food and Bait Herring Management Plan (Connolly 2001) are used to manage the fishery.

A herring food and bait fishery occurred in the vicinity of Unalaska Island from 1929-1938 and in 1945 with harvests that ranged from 75 to 2,510 tons (Table 5). This early fishery consisted of gillnet and purse seine harvests. In an attempt to improve product quality, holding pounds were utilized by the numerous small, shorebased hand-packing operations. A large portion of the harvest was brined or frozen as a food or bait product. Purse seine gear provided the bulk of the harvest. From 1946-1980 commercial herring harvest did not occur.

From 1981-1986 and 1990-2000 only purse seine gear was used and harvests ranged from 820 to 3,578 tons (Table 4 and 5). During the 1987 and 1988 seasons, one gillnet permit holder harvested herring and in 1989 two gillnet permit holders recorded landings. From 1989 through 2000, only purse seine vessels participated in the fishery. Purse seine vessels average approximately 56 feet in length and deploy seines up to 250 fathoms in length and 25 to 45 fathoms in depth. In 2001 the BOF adopted a regulation establishing a gillnet fishery and allocated the gillnet fleet seven percent of the total "Dutch Harbor" fishery allocation. Six gillnet vessels participated in the 2001 gillnet fishery (Table 6).

Prior to 1992 and during 1994-1996, purse seine fishing occurred at night using scanning sonar to locate herring schools. Fishers would conduct organized "sonar searches" over fairly large areas to find herring concentrations. In 1992-1993 and 1997-2001, the purse seine fishery occurred during daylight hours and spotter aircraft were used to locate herring. The change to daylight openings improved the department's ability to monitor and manage the fishery. During recent seasons, the number of spotter aircraft has increased from three in 1995 to a high of nine in 1997. Historical harvest locations have extended over approximately 90 miles, from Tigalda Island to Makushin Bay on Unalaska Island. However, in recent years, the majority of the harvest has occurred within a five mile radius of shorebased processing facilities in Unalaska Bay. In 1991, the BOF changed the opening date from August 15 to July 16 to reduce the chance of catching non-Togiak and North Alaska Peninsula herring stocks in the "Dutch Harbor" fishery. In 1998, the BOF changed the opening date again to NOON on July 15 due to aircraft safety concerns with the fishery being conducted in the dark.

Historically, quality concerns associated with feeding herring (i.e. "belly burn") have occurred in the food and bait fishery. Feed problems were overcome in the past by using holding pounds, where seine caught herring were held in pens until their stomachs emptied. Gillnet caught herring required

special handling to prevent spoilage. Most feed-related spoilage problems have been eliminated in recent years by using ice and chilled seawater in conjunction with rapid processing.

The fishery timing and availability of herring in the Dutch Harbor area has changed in recent years. Aleutian Island herring were previously categorized into an early summer run (late June to late July) and a late summer run (late August to early September). Since 1980, herring have arrived in the Dutch Harbor area about July 1 and have been present through mid-September.

From 1991-1998, permit holders were paid \$300 per ton. In 1999, a high demand for bait herring in longline and pot fisheries resulted in permit holders receiving \$400 per ton on the grounds and, at one processor, \$600 per ton delivered to the dock. During the 2001 fishery, exvessel prices were \$300 per ton at tenders and \$500 per ton delivered to the dock. (Table 5). The entire herring harvest from the 2001 Aleutian Islands food and bait fishery was processed for bait.

HARVEST STRATEGY

Commercial herring fisheries are regulated by emergency order to achieve exploitation mandates by the BOF and to address problems with herring wastage. Management plans and other BOF directives set policies by which these fisheries are prosecuted (ADF&G 2001, Connolly and Murphy 2001).

Dutch Harbor Food and Bait Allocation

The harvest strategy for the Aleutian Islands "Dutch Harbor" herring food and bait fishery has changed since the fishery was re-established in 1981. During the 1981 and 1982 open seasons, there were no harvest restrictions. From 1983-1985, the department implemented a harvest ceiling of 3,527 tons per year due to biological concern over multiple exploitation of Eastern Bering Sea spawning stocks, specifically the Bristol Bay, Nelson Island, and Port Moller stocks. Scale pattern analysis studies identified some herring harvested during the Aleutian Islands herring food and bait fishery to be part of the Eastern Bering Sea herring biomass (Rogers and Schnepf 1985). In 1986, the department reduced the "Dutch Harbor" fishery harvest allocation by 30% to 2,453 tons in response to the BOF concern for the possible lack of recruitment in the contributing stocks (primarily Togiak, which is estimated to be the bulk of the Aleutian Island's fishery harvest). This reduction corresponded with the percent reduction of the observed Togiak herring spawning biomass between the springs of 1985 and 1986. The 1987 herring harvest allocation was 2,332 tons, which was proportional to the 1985 to 1987 reduction of the observed Togiak spawning biomass.

In 1988, the BOF implemented the Bering Sea Herring Fisheries Management Plan (Appendix B: 5 AAC 27.060), which established the biological criteria for calculating the "Dutch Harbor" food and bait allocation (Appendix C). To ensure conservation of herring stocks, the BOF adopted a regulation requiring that the overall exploitation of a herring stock should not exceed 20% of the spawning biomass. For the Togiak spawning stock, an allocation between the sac roe fishery, spawn on kelp fishery, and the "Dutch Harbor" food and bait fishery was established to prevent the

harvest from exceeding 20% of the observed spawning biomass. The BOF also considered the number of fishers involved and the value of the fishery when it established the allocations. The “Dutch Harbor” food and bait fishery is allocated seven percent of the Togiak District’s harvestable biomass after a 1,500 ton deduction for the Togiak District Spawn-on-Kelp fishery.

In 2001, the BOF established a herring food and bait gillnet fishery by adopting a regulation that requires division of the total “Dutch Harbor” food and bait allocation between gillnet and seine gear. This resulted in the 2001 total fishery allocation of 1,572 tons being further allocated to seven percent (110 tons) for gillnet gear and 93 percent (1,462 tons) for seine gear (5 AAC 27.655; Table 6).

Sac Roe Guideline Harvest Levels

The Guideline Harvest Level (GHL) for the Port Moller District of the North Peninsula is determined in-season. It is based on the application of observed herring biomass from department aerial surveys to the sliding scale exploitation rate established for the district in the Alaska Peninsula and Aleutian Islands Management Area Sac Roe Herring Management Plan (Connolly and Murphy 2001; Appendix D). As established in the Bering Sea Herring Fishery Management Plan (5 AAC 27.060; Appendix B) an expectation of a minimum herring biomass of 1,000 tons is assured prior to the department opening the commercial fishery in the Port Moller District.

Prior to 2000, South Peninsula and Aleutian Islands waters were opened by emergency order with individual sections assigned either GHLs based on recent-year biomass estimation or set at 25 tons with the potential of additional harvest if department surveys warranted (Witteveen et al. 1999). During 2000, South Peninsula and Aleutian Islands waters remained closed to commercial fishing in order to prevent overharvest of individual spawning stocks. In 2001, the department considered allowing harvest from individual stocks, if warranted, based on observed biomass.

CATCH DATA

Department personnel compiled the commercial harvest data, which were based on computer tabulations originating from individual sale receipts (fish tickets) given to permit holders at the time of delivery. Fish tickets and the computer-generated summaries were edited by department staff for errors and omissions. Fish ticket editing is usually required to finalize the data for any given year. Later reports may contain minor differences in the catch data that are listed in this report.

Commercial harvest samples were collected during the 2001 “Dutch Harbor” herring food and bait fishery. These samples provided age composition, age-at-weight, and age-at-length data from the commercial harvest (Table 7). Age was determined by examining scales (Warner and Shafford 1979) taken from the preferred area located on the left side of the herring three scales posterior to the center of the operculum. One scale was taken from each herring, and the ages were recorded in years.

Standard length measurements were taken (lower jaw to the hypural plate). Mean lengths and weights were calculated from an unweighted composite of the data collected from each location sampled (Table 7).

SAC ROE FISHERY

In 2001, herring sac roe commercial harvest did not occur in the Alaska Peninsula and Aleutian Islands Management Area. The observed herring biomass in the Port Moller District was above the 1,000 ton threshold that is required to open the fishery by emergency order as established in the Bering Sea Herring Management Plan. The department, however, did not open the Port Moller District to commercial harvest due to a lack of industry interest. From 1997-1999, poor market conditions and low observed herring biomass contributed to the absence of commercial harvest from the South Alaska Peninsula Districts. This prompted the ADF&G to keep the districts closed during the 2000 season in order to prevent over harvest of stocks from which insufficient biomass information has been quantified in recent years. In 2001, because of a lack of industry interest, South Peninsula waters were not opened to commercial herring fishing.

Prior to 2000, and again in 2001, in areas open for exploration (all sections of Aleutian Islands districts, the Seal Cape-Wosnesenski Section of the Pavlof District and General Sections of the King Cove and Sand Point Districts) fishing time could be allowed to give fishers the opportunity to locate and harvest herring. In areas with a GHL, inseason fishing time would be based on department biomass surveys. Due to a lack of industry interest, all these areas remained closed during the 2001 sac roe season and no exploratory effort occurred in South Peninsula waters (Table 2 and Table 3).

North Peninsula Sac Roe

There are three commercial herring fishing districts in North Peninsula waters: Port Heiden, Port Moller, and Amak Districts. Purse seine and gillnet gear are permitted in North Peninsula waters and both gear types share common time and open areas. The department normally provides a minimum of six hours advanced notice prior to commercial fishing periods in the Port Moller and Port Heiden Districts.

Department staff arrived in Port Moller on May 9. The first aerial survey of the season was conducted on May 14 when 1,025 tons of herring were spotted. By May 22, a total of 2,385 tons of herring were observed, however 70 tons of this total is estimated to have been documented during more than one survey. This resulted in an estimated total biomass of 2,315 tons of herring in the Port Moller District (Table 8 and Table 9). As established in the Bering Sea Herring Management Plan, a yearly threshold of 1,000 tons of observed herring biomass is required for the department to allow a fishing period. Because the total biomass exceeded this threshold the department was prepared to open the fishery by emergency order. Although one buyer was interested in processing herring from North Peninsula waters, no vessels were available to harvest herring and the fishery remained closed during 2001 (Table 10). These waters included the Amak District, which did not open for exploration during 2001. The 2,315 tons of observed biomass for North Peninsula waters

was totaled from Herendeen Bay (335 tons) and Port Moller (1,980 tons). Bear River to Stroganof Point waters were not surveyed during 2001, however, for total biomass estimates, herring biomass observed in this area is typically assumed to be observed in Port Moller and Herendeen Bay during later surveys (Table 8). The total estimated herring biomass was well below the 1991-2000 average of 4,274 tons, although due to aircraft availability, surveys of Port Heiden did not occur during 2001 (Table 9). Herring spawn was not observed in North Peninsula waters during 2001 department surveys. Aerial surveys were limited in 2001 due to the absence of industry-conducted surveys and lack of industry participation in the commercial fishery. Industry surveys help direct department staff to herring concentrations.

The 2002 North Peninsula sac roe herring GHl is 0-150 tons. Considering historical herring biomass in North Peninsula waters, management of the North Peninsula sac roe herring fishery will again be very conservative in 2002. Historically, the previous years' North Peninsula herring biomass estimate has been a very poor indicator of herring returns in the following year. In 2002, the GHl will be adjusted inseason based on observed stock size (Appendix D). Age class information from 2001 is not available because the lack of commercial harvest prevented the collection of herring samples (Appendix E).

South Peninsula Sac Roe

South Peninsula waters remained closed to herring fishing during 2001 because of a lack of industry interest (Table 10). The Swedania Point-Balboa Bay, Point Aliaksin-Beaver Bay, and General Sections of the Sand Point District, the Pavlof Bay, Seal Cape-Wosnesenski and General Sections of the Pavlof District, and the King Cove District could have opened for exploratory fishing if biomass estimates warranted commercial fishing and there was industry interest in harvesting herring. Prior to 2000, exploratory sac roe herring fisheries in South Peninsula waters were open from April 15 through July 15. Fishing periods were established by emergency order to open at NOON on odd number days of the month and close at NOON on even number days of the month, followed by 24-hour closed periods. During 2000, South Peninsula waters remained closed to commercial herring fishing to prevent over harvest of individual stocks.

The department conducted aerial surveys in waters of the Shumagin Islands on May 29 and South Peninsula mainland waters from Kupreanof Point to Beaver Bay on May 30. During the Shumagin Islands survey 395 tons of herring was observed in schools that typically ranged from 5 to 30 tons. A larger biomass of fish was observed during the South Peninsula mainland survey although distinction between schools of herring and schools of other forage fish such as capelin *Mallotus villosus* and Pacific sand lance *Ammodytes hexapterus* was difficult. A total of 1,335 tons of forage fish was observed from Stepovak Bay to Beaver Bay, but of this only 885 tons was identified as herring.

The historical age composition of South Peninsula commercial purse seine herring sac roe harvests by area and percent is presented in Appendix F.

ALEUTIAN ISLANDS FOOD AND BAIT FISHERY

2001 Regulatory Changes

During the January 2001 BOF meeting, regulations were adopted that allowed gillnet fishers a practical opportunity to harvest herring from the “Dutch Harbor” allocation given the short (usually less than one hour) open periods required to manage the purse seine fishery. The fishery can open by emergency order beginning NOON June 24 and can extend through the close of the food and bait season on February 28. The fishery is allocated seven percent of the total “Dutch Harbor” herring food and bait allocation (5 AAC 27.655).

Also adopted during the 2001 BOF meeting was a regulation requiring any herring harvest that exceeds the allocation during the “Dutch Harbor” fishery to be deducted from the following year’s allocation by gear type. If less than the herring allocation is harvested, the balance of the biomass is not added to the following year’s allocation.

Gillnet Fishery

The “Dutch Harbor” herring commercial gillnet fishery occurred over nine days with seven gillnet permit holders (six vessels) and one processor participating. At NOON on June 25, the Unimak, Akutan, Unalaska, Umnak, and Adak Districts opened to commercial herring fishing by gillnet gear for 24 hours. With the exception of a two-hour closure due to a late harvest report on June 30, the fishery was extended continuously until NOON on July 1.

Through NOON on July 1, the fleet harvested approximately 97 tons of the 110-ton herring allocation. The fleet’s herring harvesting efficiency increased as the fishery progressed with approximately 66 tons taken from June 29 through July 1. With only 13 tons remaining to be harvested, and as an alternative to the fishery closing for the remainder of the year, the fleet reached a cooperative agreement allowing one permit holder to harvest the remaining fish.

The ADF&G opened the fishery for the permit holder participating in the cooperative agreement on July 11. The permit holder made one landing for approximately eight tons and reported approximately two tons of herring lost due to a damaged net.

The total gillnet fishery harvest was approximately 107 tons. All vessels delivered to the participating processor’s dock for an exvessel price of \$500 per ton. This resulted in a total gillnet fishery exvessel value of approximately \$53,500.

Purse Seine Fishery

A preseason meeting with fishermen, processors, and other interested parties was held on Saturday July 14 to discuss the ADF&G management strategy, exchange information, and register vessels, tenders, and processors for the purse seine fishery.

Department aerial surveys of Unalaska Bay waters were conducted at 12:30 PM and 6:30 PM on July 14. From these surveys, the department estimated that 8,000 tons of herring were present in Unalaska Bay.

Effort consisted of 14 purse seine vessels, 12 tenders representing three processing companies, and six spotter aircraft. Processors wished to purchase a combined 1,400 tons.

On July 15, two surveys were conducted prior to the opening of a commercial fishing period. Given the abundance of herring in Unalaska Bay, the department used a survey at 9:45 AM to identify an area of Unalaska Bay to be considered for an open period during a subsequent survey. At 11:00 AM the fleet was placed on 30-minute notice and directed towards Captain's Bay for a potential open period following a 11:30 AM survey. After the 11:30 AM survey, the department announced a 10-minute fishing period from 12:20 PM to 12:30 PM. Open waters were limited to inner Unalaska Bay southeast of Hog Island and west of 166°33.20' W. longitude (Figure 4). Eleven landings from the period resulted in a harvest of 761 tons.

At 7:15 PM, the ADF&G conducted a test fishery to gather biological information from herring present and harvest herring to recover expenses incurred while administering the fishery. During the test fishery, approximately 192 tons of herring were harvested. Approximately 500 herring from the test and commercial fishery were collected for length, weight, and age composition. The most abundant age classes in the sample were age-8 31.4%, age-9 12.8%, and age-10 11.9% (Table 11; Figure 9). The average herring length in the sample was 291 mm, and the average weight was 389 g (Table 7).

Department surveys for herring biomass estimation were prevented by fog and poor visibility on July 16. By 4:00 PM, the fleet arrived at a cooperative agreement to harvest the remaining 600 tons desired by the processors. The department opened Unalaska Bay to commercial herring fishing for vessels participating in the cooperative fishery at 5:00 PM. One vessel was directed to set and an initial harvest biomass estimate was made prior to allowing another vessel to make a subsequent set. Five landings were made by 11:50 PM resulting in a cooperative harvest of 571 tons.

The exvessel value of the 2001 purse seine fishery is an estimated \$406,400. Processors purchased herring for \$300 per ton at tenders and paid an additional \$150 per ton to vessels that delivered to the dock. The entire harvest was purchased for bait.

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Table 1. Alaska Peninsula area commercial herring sac roe fishery harvest by time period, area, and year, 1979-2001.

Year	North Peninsula		South Peninsula		Total
	Harvest (Tons)	Harvest Time Period	Harvest (Tons)	Harvest Time Period	
1979	0.0	-	10.1	July 4- July 4	10.1
1980	0.0	-	453.8	May 18-July 14	453.8
1981	0.0	-	797.6	May 9-June 23	797.6
1982	505.5	May 31-June 12	176.2	May 31-June 14	681.7
1983	627.0	May 9-May 29	0.0	-	627.0
1984	431.2	May 24-June 8	210.2	May 13-June 1	641.4
1985	710.2	May 24-June 4	287.7	June 1-June 11	997.9
1986	894.4	May 18-May 30	281.9	June 7-June 14	1,176.3
1987	513.7	May 9-June 5	319.0	June 8-June 19	832.7
1988	294.3	May 17-June 15	376.7	May 31-June 20	671.0
1989	729.0	May 28-June 23	310.3	May 13-June 19	1,039.3
1990	272.8	June 4-June 19	312.2	May 14-June 14	585.0
1991	1,313.0	May 17-July 4	157.4	May 16-June 11	1,470.4
1992	3,969.0	May 23-June 17	180.4	June 4-June 7	4,149.4
1993	535.9	May 8-June 9	97.0	May 27-June 9	632.9
1994	89.8	May 21-June 7	8.2	June 2-June 3	98.0
1995	337.3	May 29-June 20	62.7	June 6-June 17	400.0
1996	^a	June 12-June 18	117.3	May 10-June 27	^a
1997	0.0	-	0.0	-	0.0
1998	^a	May 21-June 3	0.0	-	^a
1999	0.0	-	0.0	-	0.0
2000	0.0	-	0.0	^b	0.0
2001	0.0	-	0.0	-	0.0
1991-2000 Average	640.9		62.3		703.2

^a This information cannot be released due to confidentiality requirements.

^b The South Peninsula exploratory sac roe herring fishery was closed during the 2000 season.

Table 2. North Peninsula commercial herring sac roe fishery harvest by section, 1982-2001.

Year	Port Moller District			Bear River Bering Sea Coast	Port Heiden District	Total
	Deer Island Mud Bay Section	Herendeen Bay Section	Port Moller Bay Section		Port Heiden Bay Section	
1982	0.0	279.5	180.0	46.0	0.0	505.5
1983	0.0	509.3	36.5	81.3	0.0	627.0
1984	0.0	180.8	250.4	0.0	0.0	431.2
1985	0.0	173.3	255.5	281.4	0.0	710.2
1986	0.0	156.1	254.8	483.5	0.0	894.4
1987	0.0	156.6 ^a	349.8	7.3	0.0	513.7
1988	0.0	8.2	286.1	0.0	0.0	294.3
1989	0.0	67.0	246.5	415.6	0.0	729.0
1990	0.0	155.8	117.1	0.0	0.0	272.8
1991	156.3	167.0	689.6	300.2	0.0	1,313.0
1992	18.3	0.0	2,350.7	0.0	1,600.0	3,969.0
1993	0.0	106.6	371.0	57.9	0.0	535.9
1994	7.2	0.0	82.6	0.0	0.0	89.8
1995	3.2	145.7	188.4	0.0	0.0	337.3
1996	0.0	b	b	0.0	0.0	b
1997	0.0	0.0	0.0	0.0	0.0	0.0
1998	0.0	0.0	b	b	0.0	b
1999	0.0	0.0	0.0	0.0	0.0	0.0
2000	0.0	0.0	0.0	0.0	0.0	0.0
2001	0.0	0.0	0.0	0.0	0.0	0.0
1991-2000 Average	18.5	49.3	373.6	39.5	160.0	640.9

^a At least 11 tons were caught in the Deer Island-Mud Bay Section.

^b This information cannot be released due to confidentiality requirements.

Table 3. South Peninsula commercial herring sac roe fishery harvest by geographic area, 1979-2001.

Year	Area									Total
	Stepovak Bay ^a	Balboa Bay	Pavlof Bay	Canoe Bay	Volcano-Dolgoi	Belkofski Bay	Lenard Harbor	Dolgoi Harbor	Shumagin Islands	
1979	0.0	0.0	0.0	0.0	0.0	10.1	0.0	0.0	0.0	10.1
1980	196.0	132.0	113.8	12.0	0.0	0.0	0.0	0.0	0.0	453.8
1981	128.6	35.7	263.1	168.1	64.8	15.7	121.6	0.0	0.0	797.6
1982	0.0	5.0	0.0	171.2	0.0	0.0	0.0	0.0	0.0	176.2
1983 ^b	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984	28.9	25.1	0.0	156.2	0.0	0.0	0.0	0.0	0.0	210.2
1985	10.9	0.0	38.0	238.8	0.0	0.0	0.0	0.0	0.0	287.7
1986	0.0	0.0	61.0	140.6	13.0	8.0	59.3	0.0	0.0	281.9
1987	0.0	0.0	91.7	117.7	0.0	37.8	59.5	12.3	0.0	319.0
1988	0.3	11.0	69.2	236.5	17.0	12.0	30.7	0.0	0.0	376.7
1989	39.2	17.7	52.8	148.3	0.0	0.0	8.6	5.2	38.5	310.3
1990	71.7	20.8	0.0	120.4	0.0	3.2	5.9	0.0	90.4	312.2
1991	19.3	19.3	0.0	77.5	0.0	0.0	0.0	0.0	41.4	157.4
1992	0.0	0.0	0.0	180.4	0.0	0.0	0.0	0.0	0.0	180.4
1993	4.6	0.0	0.0	92.4	0.0	0.0	0.0	0.0	0.0	97.0
1994	0.0	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	8.2
1995	0.0	9.8	0.0	52.9	0.0	0.0	0.0	0.0	0.0	62.7
1996	20.7	3.9	0.0	77.1	0.0	0.0	0.0	0.0	15.6	117.3
1997	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1998	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1999	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991-2000 Average										
	4.5	3.3	0.0	48.9	0.0	0.0	0.0	0.0	5.7	62.3

^a The 1984-88 catches came from Ramsey Bay, the 1989 and 1993 catch came from Granville Bay.

^b In 1983 the South Peninsula sac roe fishery was closed, all herring catches were allocated to a food and bait fishery that did not develop.

Table 4. Aleutian Islands area "Dutch Harbor" commercial herring food and bait fishery summary, including landing date, days fished, preseason Togiak spawning biomass, guideline harvest level, harvest, and number of vessels fishing, 1981-2001.

Year	Landing Date		Days fished	Preseason Togiak Spawning Biomass	GHLs Short Tons	Food & Bait Harvest Short Tons	Number Vessels Fishing
	First	Last		Short Tons		Tons	
1981	Aug 3	Aug 23	21	159,000	None	^a	^a
1982	Aug 5	Sep 12	39	98,000	None	3,565	7
1983	Jul 23	Sep 6	46	142,000	3,525 ^b	3,567	8
1984	Jul 17	Jul 27	11	115,000	3,525 ^b	3,578	9
1985	Jul 17	Aug 11	26	132,000	3,525 ^b	3,480	6
1986	Jul 16	Jul 28	13	96,000	2,453	2,394	7
1987	Jul 16	Jul 23	4	88,000	2,332	2,503	9
1988	Jul 16	Sep 18	21	132,000	3,100	2,004	8
1989	Jul 16	Aug 5	19	100,108	3,100	3,081	9
1990	Aug 15	Aug 15	<1	72,000	903	820	7
1991	Jul 17	Jul 17	<1	83,229	931	1,325	8
1992	Jul 16	Jul 28	5	60,214	1,940	1,949	11
1993	Jul 16	Jul 16	<1	164,135	2,193	2,790	13
1994	Jul 16	Jul 19	4	165,747	2,215	3,349	16
1995	Jul 16	Jul 16	<1	149,093	1,982	1,748	18
1996	Jul 16	Jul 16	<1	135,585	1,793	2,239	25
1997	Jul 15	Jul 19	5	125,000	1,645	1,950	26
1998	Jul 16	Jul 16	<1	121,054	1,590	1,994	22
1999	Jul 16	Jul 20	4	156,200	2,082	2,398	22
2000	Jul 15	Jul 15	<1	130,904	1,728	2,014	23
2001 ^c	Jun 25	Jul 16	10	119,818	1,572	1,439	20
1991-2000 Average			2	129,116	1,810	2,176	18

^a Number may not be released due to state confidentiality requirements.

^b Harvest ceiling of 3,525 established by Alaska Board of Fisheries.

^c In 2001 a gillnet fishery was established

Table 5. Aleutian Islands area "Dutch Harbor" herring food and bait fisheries historical summary, 1929-2001.

Year	Harvest in Short Tons	Number of Vessels Making Landings	Number Landings	Tons Per Boat	Tons Per Landing	Price Per Ton	Exvessel Value (Thousands)	Exvessel Value Per Vessel (Thousands)
1929	1,259					Information not Available		
1930	1,916					Information not Available		
1931	1,056	26				Information not Available		
1932	2,510	30				Information not Available		
1933	1,585	38				Information not Available		
1934	1,533					Information not Available		
1935	2,412					Information not Available		
1936	1,379					Information not Available		
1937	579					Information not Available		
1938	513					Information not Available		
1939-44	No Fishery							
1945	75					Information not Available		
1946-80	No Fishery							
1981 ^a	704	^b	16	352	44	300	211	^b
1982	3,565	7	95	509	38	300	1,020	146
1983	3,567	8	96	446	37	232	828	104
1984	3,578	9	61	398	59	210	751	83
1985	3,480	6	78	560	45	162	564	94
1986	2,394	7	53	342	45	254	600	86
1987	2,503	8	45	373	56	300	751	94
1988	2,004	8	59	251	34	252	505	63
1989	3,081	9	69	342	45	283	873	97
1990	820	7	8	117	103	350	287	41
1991	1,325	8	18	166	74	300	398	50
1992	1,949	11	26	177	75	300	573	52
1993	2,790	13	32	215	87	300	837	64
1994	3,349	14	65	239	52	300	1,005	72
1995	1,748	14	24	125	73	300	524	37
1996	2,239	24	29	93	77	300	672	28
1997	1,950	26	63	75	31	300	585	23
1998	1,994	22	22	91	91	300	598	27
1999	2,398	21	71	109	34	400-600	1,038	47
2000	2,014	20	28	88	72	300-500	671	29
2001 ^c	1,439	20	30	95	48	300-500	406	29
1929-1938								
Average	1,474					Information not Available		
1991-2000								
Average	2,176	17	38	138	67	300	690	43

^a Represents purse seine fishing effort since 1981.

^b This information can not be released due to state confidentiality requirements.

^c In 2001 a gillnet fishery was established.

Table 6. Aleutian Islands area “Dutch Harbor” herring food and bait fishery allocations, commercial harvest, number of vessels, and number of days fished by gear type, 2001.

Year	Preseason	Total Dutch Harbor herring fishery		Gillnet Fishery				Seine Fishery			
	Togiak										
	Spawning Biomass (st)	Allocation (st)	Harvest (st)	Allocation (st)	Harvest (st)	Vessels	Days Fished	Allocation (st)	Harvest (st)	Vessels	Days Fished
2001	119,818	1,572	1,439	110	107	6	9	1,462	1,332	14	2

Note: st = short tons

Table 7. Age, sex, weight and length of herring harvested during the Aleutian Islands area “Dutch Harbor” commercial purse seine herring food and bait fishery, 2001.

Age (Years)	Sex			Total	Percent of Total	Weight			Standard Length		
	Male	Fem	Unk			Mean (gm)	Standard Dev.	Number Weighed	Mean (mm)	Standard Dev.	Number Measured
5	10	5	0	15	3.5	242	20.7	15	253	6.4	15
6	3	6	0	9	2.1	296	40.2	9	270	6.4	9
7	10	17	0	27	6.4	340	49.7	27	282	9.8	27
8	65	67	0	132	31.4	369	45.4	132	285	9.5	132
9	23	31	0	54	12.8	388	40.9	54	292	7.7	54
10	18	32	0	50	11.9	401	54.7	50	294	10.0	50
11	17	24	0	41	9.7	413	50.6	41	297	9.4	41
12	12	12	0	24	5.7	437	46.2	24	304	7.9	24
13	16	29	0	45	10.7	446	47.8	45	307	7.8	45
14	8	9	0	17	4.0	473	62.5	17	309	10.5	17
15	1	3	0	4	0.9	427	55.0	4	310	6.0	4
16	1	1	0	2	0.4	477	4.9	2	315	5.6	2
Total	184	236	0	420	100.0	389	65.6	420	291	14.7	420

Table 8. North Peninsula herring biomass aerial surveys, 2001.

Date	Port Moller District					Port Heiden District			Total (Tons)
	Herendeen Bay		Port Moller Bay		Bear River to Strogonof Point		Port Heiden Bay Section		
	Tons	Rating ^a	Tons	Rating ^a	Tons	Rating ^a	Tons	Rating ^a	
May 14	150	2	875	2	Not Surveyed		Not Surveyed		
May 15	0	3	470	3					
May 16	125	2	300	2					
May 18	60	2	310	2					
May 20	0	2	60	2					
May 22	0	2	0	2					
Total Biomass Observed ^b									
	335		2,050		0		0		2,385
Estimated 2001 Biomass (Does not include herring observed during multiple surveys)									
	335		1,980		0		0		2,315

^a Rating of survey: (1) Excellent, (2) Good, (3) Fair, (4) Poor, (5) Unsatisfactory

^b Observed biomass includes herring documented during multiple surveys. The actual total biomass during May 14 - 22 is estimated at 2,315 tons.

Table 9. North Peninsula herring biomass aerial surveys, historical summary, 1984-2001.

Date	Port Moller District				Port Heiden District		Total Biomass Estimate Tons	Aerial Survey Dates Begin End	
	Herendeen Bay Tons	Port Moller Bay Tons	Additional Biomass Harvested Tons	Bear River to Strogonof Point Tons	Port Heiden Bay Section Tons				
1984	2,000	1,500-1,900				3,500-3,900	May 9 - July 31		
1985	260	1,305		5,240		6,805	May 1 - June 13		
1986	1	28		0		29	May 16 - June 7		
1987	0	5,125		0		5,125	May 6 - June 3		
1988	1,737	442		8		2,187	May 17 - June 15		
1989	1,163	1,471				2,634	May 19 - June 16		
1990	155	387				542	May 21 - June 14		
1991	2,278 (250) ^a	4,651		1,471		8,400	May 17 - June 26		
1992	755	8,269		5,798	10,021	24,843	May 19 - June 18		
1993	775	2,878		33	0	3,686	May 4 - June 9		
1994	381	274	74	0		729	May 22 - May 28		
1995	60	477	200	0		737	May 13 - June 2		
1996	390 (390) ^a	986 (755) ^a		309	65	1,750	May 9 - June 18		
1997	160	45		0		205	May 22 - June 12		
1998	930	135		360 (200) ^a		1,425	May 11 - June 3		
1999	10	220		10		240	May 16 - June 14		
2000	115	350		0		465	May 15 - May 28		
2001	335	1,980				2,315	May 14 - May 22		
1991-2000 Average									
	585	1,829	137	798	3,362	4,248			

^a Biomass estimate conducted by commercial spotter pilots are enclosed by parenthesis (); these estimates are included in the total biomass estimate. They may not be comparable to ADF&G estimates.

Table 10. Alaska Peninsula herring sac roe fishery harvest, number of landings and permits fished by year, 1979-2001.

Year	North Peninsula			South Peninsula			Total		
	Tons	Landings	Permits Fished	Tons	Landings	Permits Fished	Tons	Landings	Permits Fished
1979		No Harvest		10.1	^a	^a	10.1	^a	^a
1980		No Harvest		453.8	15	6	453.8	15	6
1981		No Harvest		797.4	93	56	797.4	93	56
1982	^a	^a	^a	138.3	13	4	^a	^a	^a
1983	627.0	47	23	0.0	0	0	627.0	47	23
1984	431.2	20	11	210.4	20	5	641.6	40	15
1985	710.2	31	17	287.8	8	5	998.0	39	20
1986	894.4	116	50	281.9	14	6	1,176.3	130	51
1987	513.8	46	27	319.0	8	^a	832.8	54	27
1988	294.3	21	9	376.7	22	10	671.0	43	19
1989	729.0	24	10	310.3	31	13	1,039.3	55	19
1990	272.8	23	5	312.2	31	6	585.0	54	9
1991	1,313.0	59	11	157.4	26	10	1,470.4	85	18
1992	3,969.0	100	24	180.3	11	7	4,149.3	112	29
1993	535.9	44	16	^a	^a	^a	^a	^a	^a
1994	89.8	7	5	^a	^a	^a	^a	^a	^a
1995	337.3	37	12	^a	^a	^a	^a	^a	^a
1996	^a	^a	^a	124.4	8	4	^a	^a	^a
1997		No Harvest	0		No Harvest	0	0.0	0	0
1998	^a	^a	^a		No Harvest	0	^a	^a	^a
1999		No Harvest	0		No Harvest	0	0.0	0	0
2000		No Harvest	0		Closed	0	0.0	0	0
2001		No Harvest	0		No Harvest	0	0.0	0	0
1991-2000 Average									
	641.0	26	7	63	7	3	704.0	33	9

^a Number can not be released due to state confidentiality requirements.

Table 11. Estimated age composition of Aleutian Islands commercial herring food and bait harvests, in percent, 1991-2001.

Year	Percent at Age (Years)													
	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1991	0.2	0.2	0.2	8.7	11.0	5.7	13.4	11.2	22.1	17.2	8.9	1.0	0.0	0.2
1992	0.0	0.3	0.2	0.3	23.3	25.0	4.8	15.2	8.9	10.0	9.4	2.5	0.2	0.0
1993	0.3	9.5	51.8	5.1	5.9	13.2	6.2	2.5	1.6	1.7	1.3	0.8	0.0	0.0
1994	0.2	1.7	24.3	36.7	3.8	4.0	13.3	6.5	3.6	3.3	1.0	0.9	0.9	0.0
1995	0.2	3.2	5.6	30.4	27.5	4.5	4.3	10.4	5.0	1.9	4.8	1.4	0.6	0.2
1996	0.0	0.7	8.2	16.1	35.8	25.8	3.3	2.9	2.7	1.6	1.5	0.8	0.4	0.2
1997	0.0	3.2	15.2	31.3	9.3	21.2	9.5	1.8	4.5	1.6	1.2	0.5	0.1	0.0
1998	0.0	6.5	7.9	25.4	26.1	8.5	14.6	11.1 ^a						
1999	0.2	0.2	12.2	8.2	21.8	21.1	10.2	15.6	5.6	2.2	0.9	1.3	0.4	0.0
2000	0.0	0.0	0.7	19.8	16.6	12.4	14.5	10.8	12.4	8.2	2.3	1.3	0.5	0.0
2001	0.0	3.5	2.1	6.4	31.4	12.8	11.9	9.7	5.7	10.7	4.0	0.9	0.4	0.0

^a Age determination in 1998 calculated the proportion of 11 and older aged fish in one category.

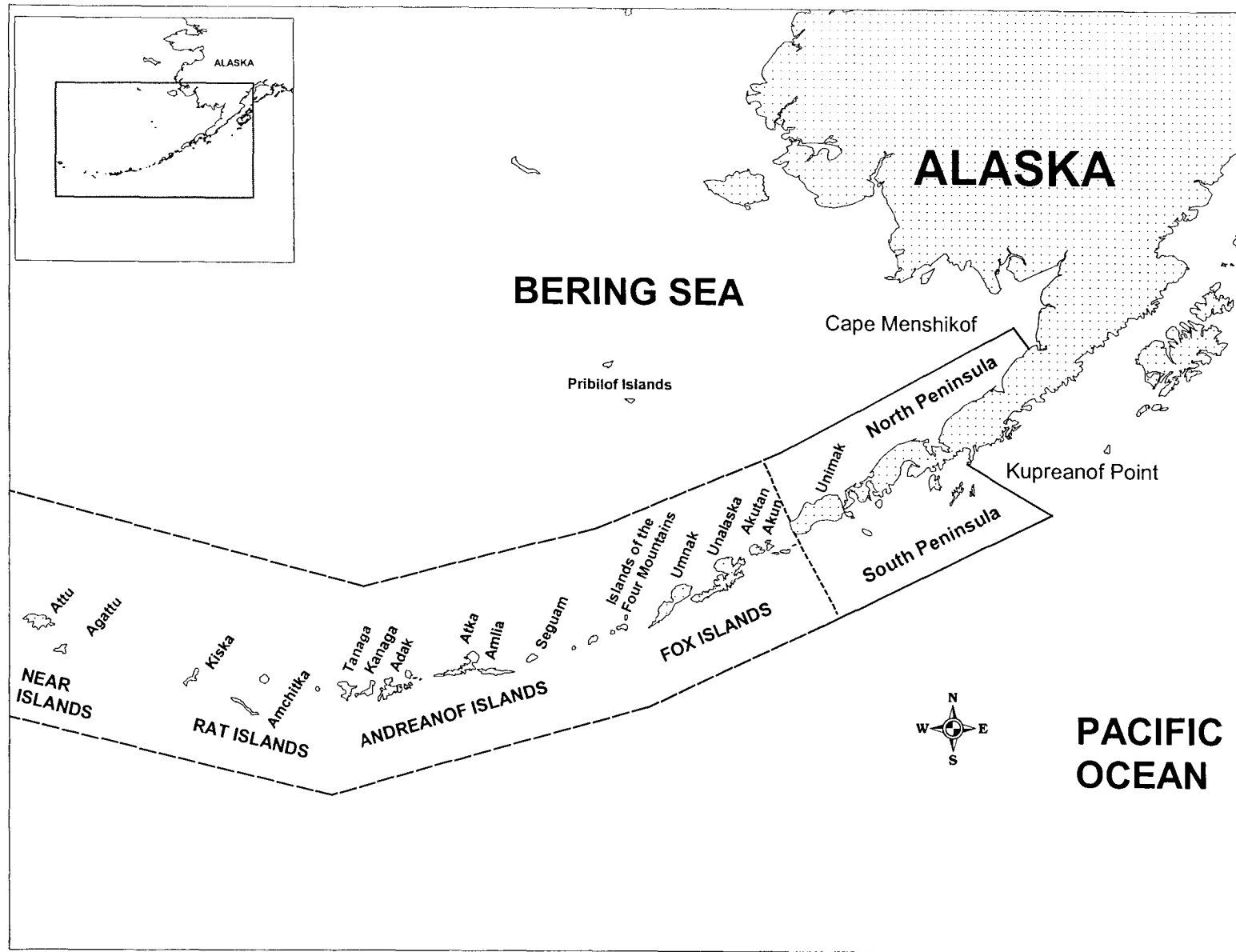


Figure 1. Map of the Alaska Peninsula and Aleutian Islands Herring Management Area.

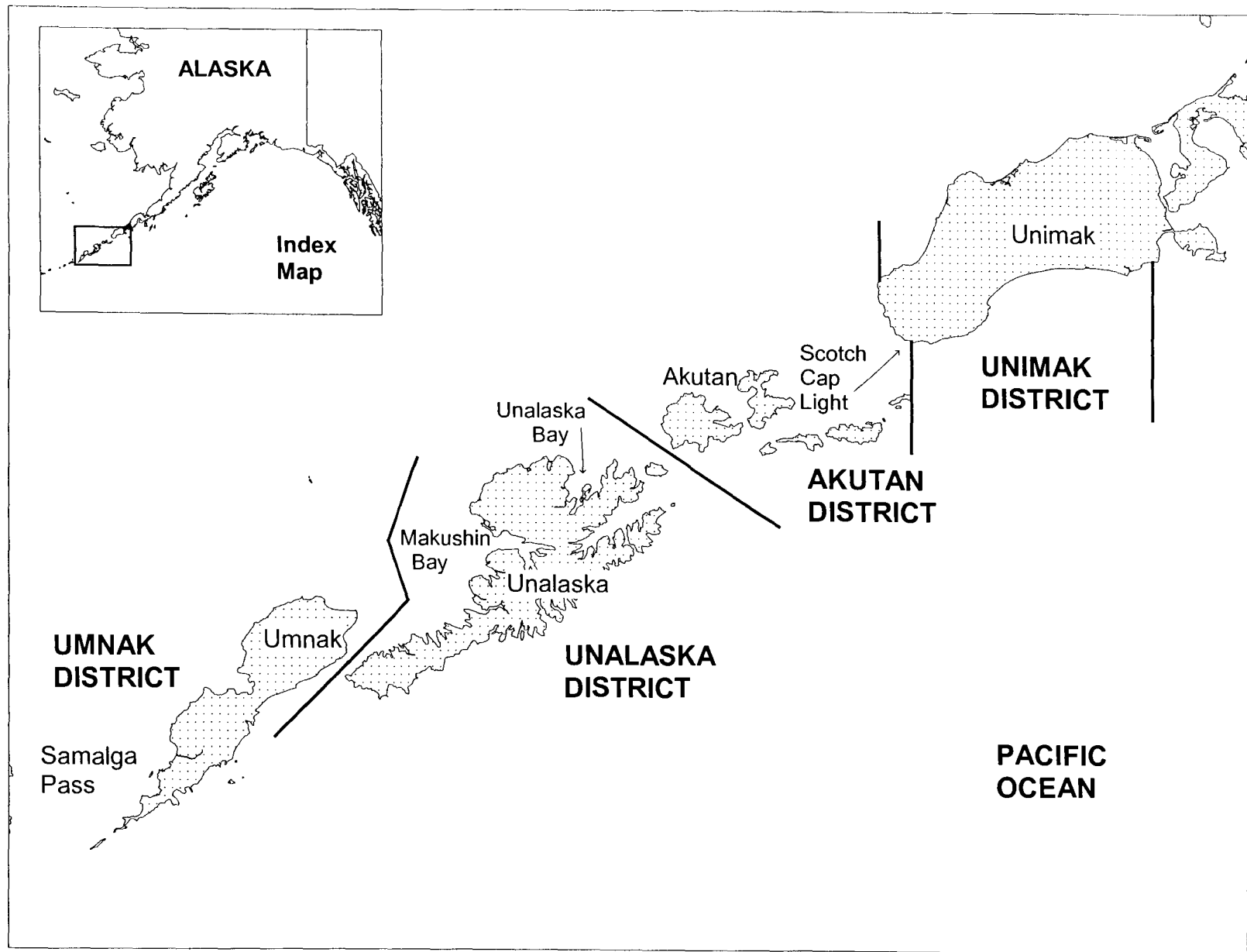


Figure 2. Map of the eastern Aleutian Islands from Samalga Pass to Unimak Island with herring fishing districts shown.

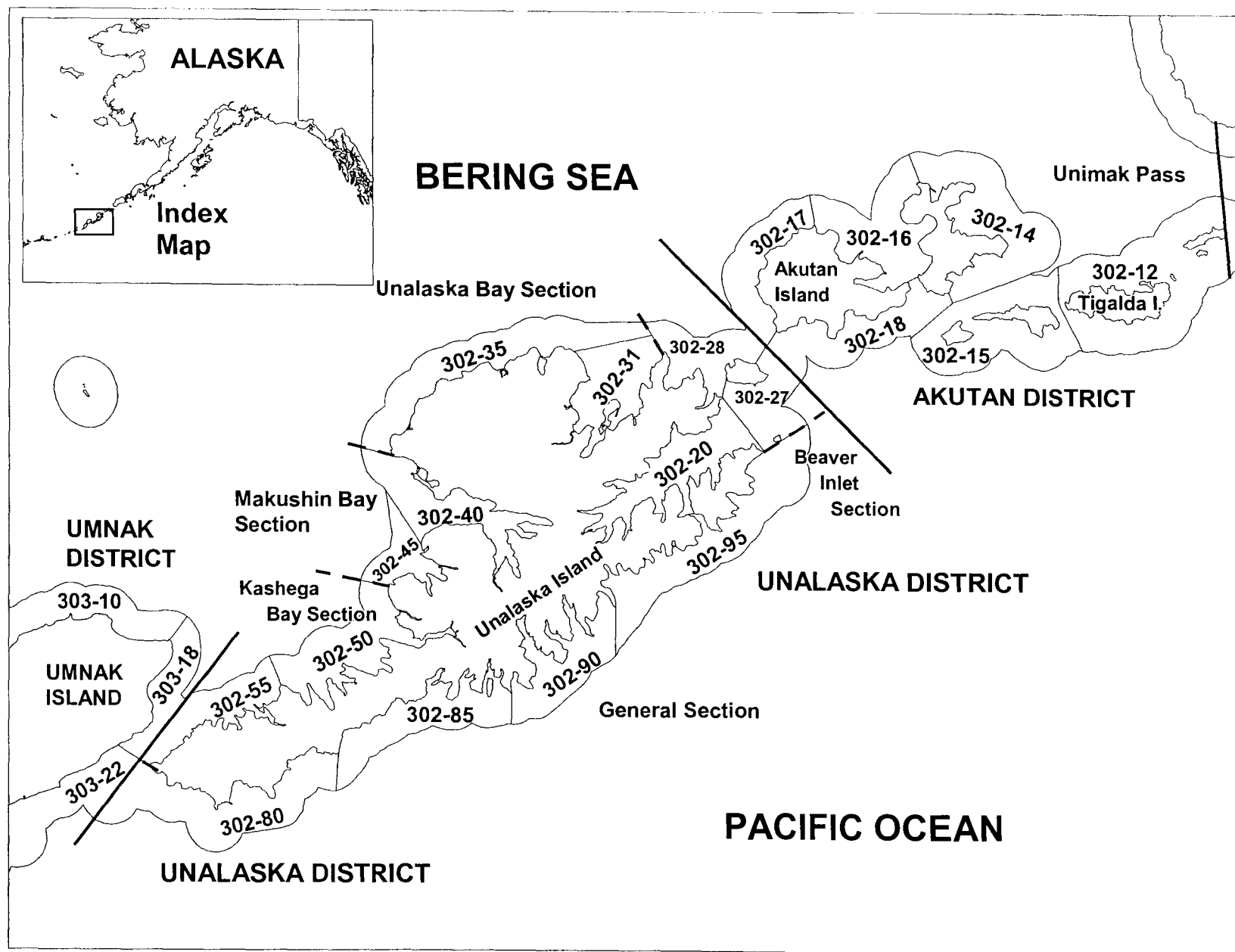


Figure 3. Map of the eastern Aleutian Islands from Tigalda Island to Umnak Island with commercial herring fishing statistical areas.

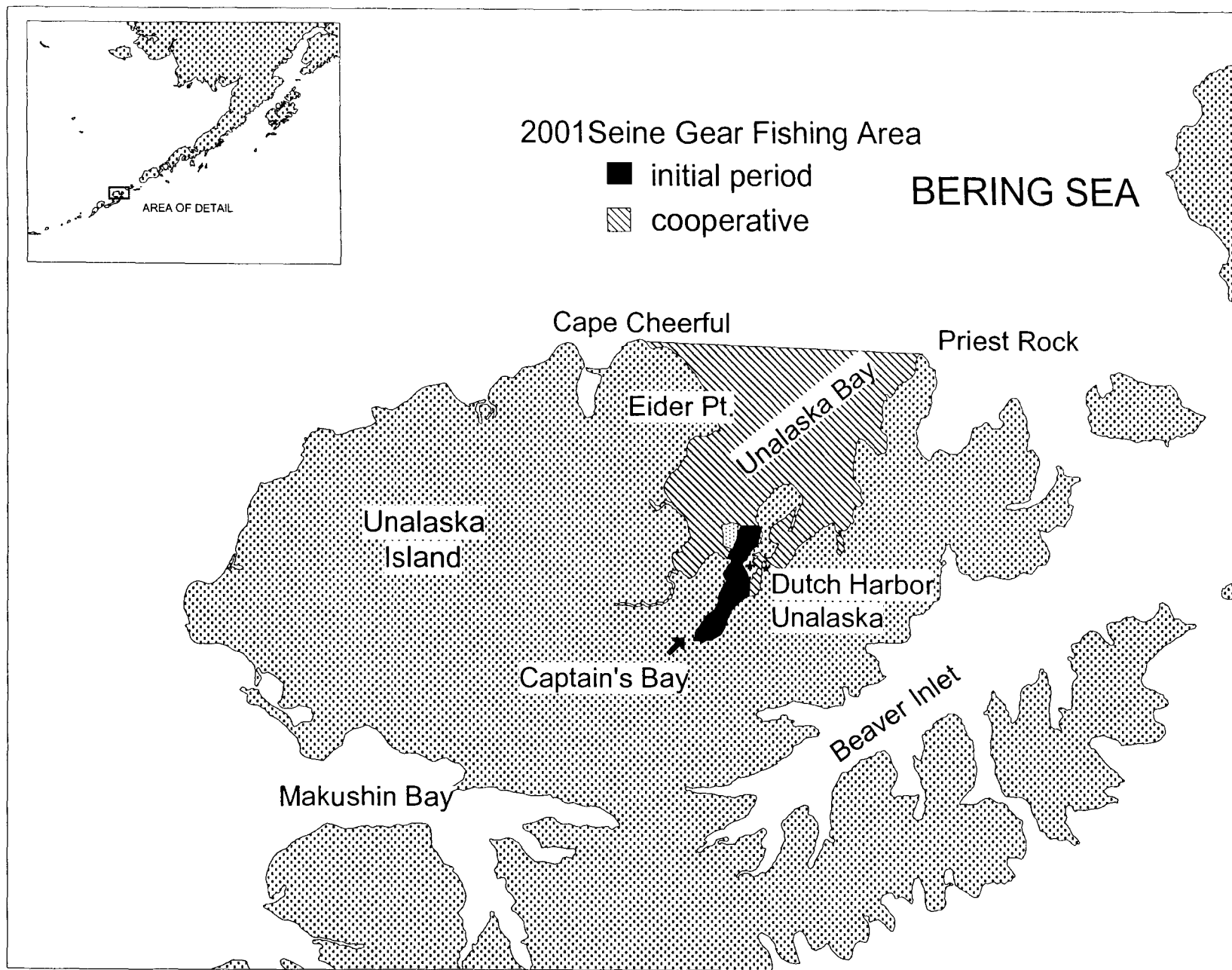


Figure 4. Map of Unalaska Island from Beaver Inlet to Makushin Bay, with the 2001 seine fishery open areas defined.

Figure 5. Map of the Alaska Peninsula from Cape Sarichef to Pavlof Bay with commercial herring fishing statistical areas.

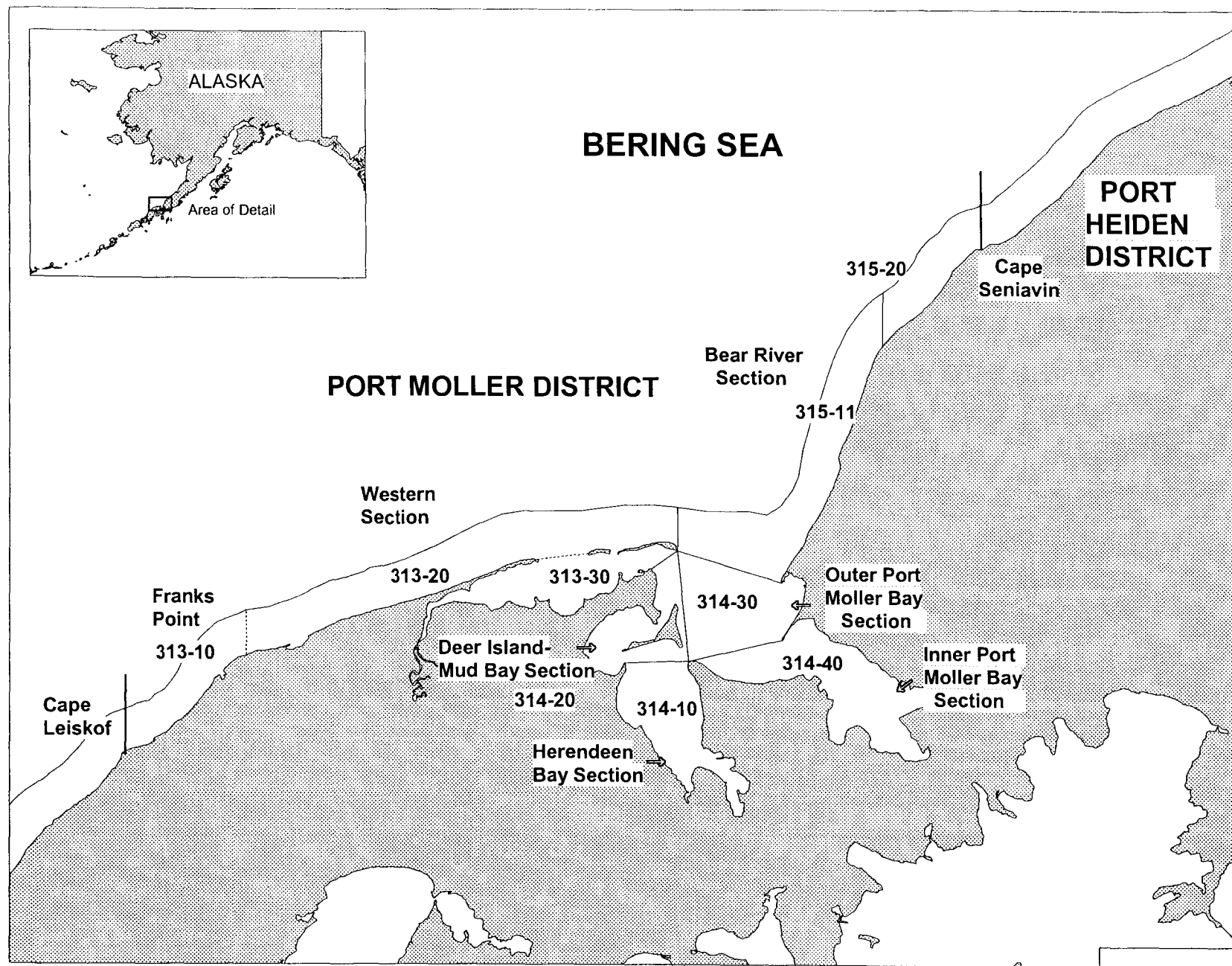


Figure 6. Map of the Port Moller District with commercial herring fishing statistical areas.

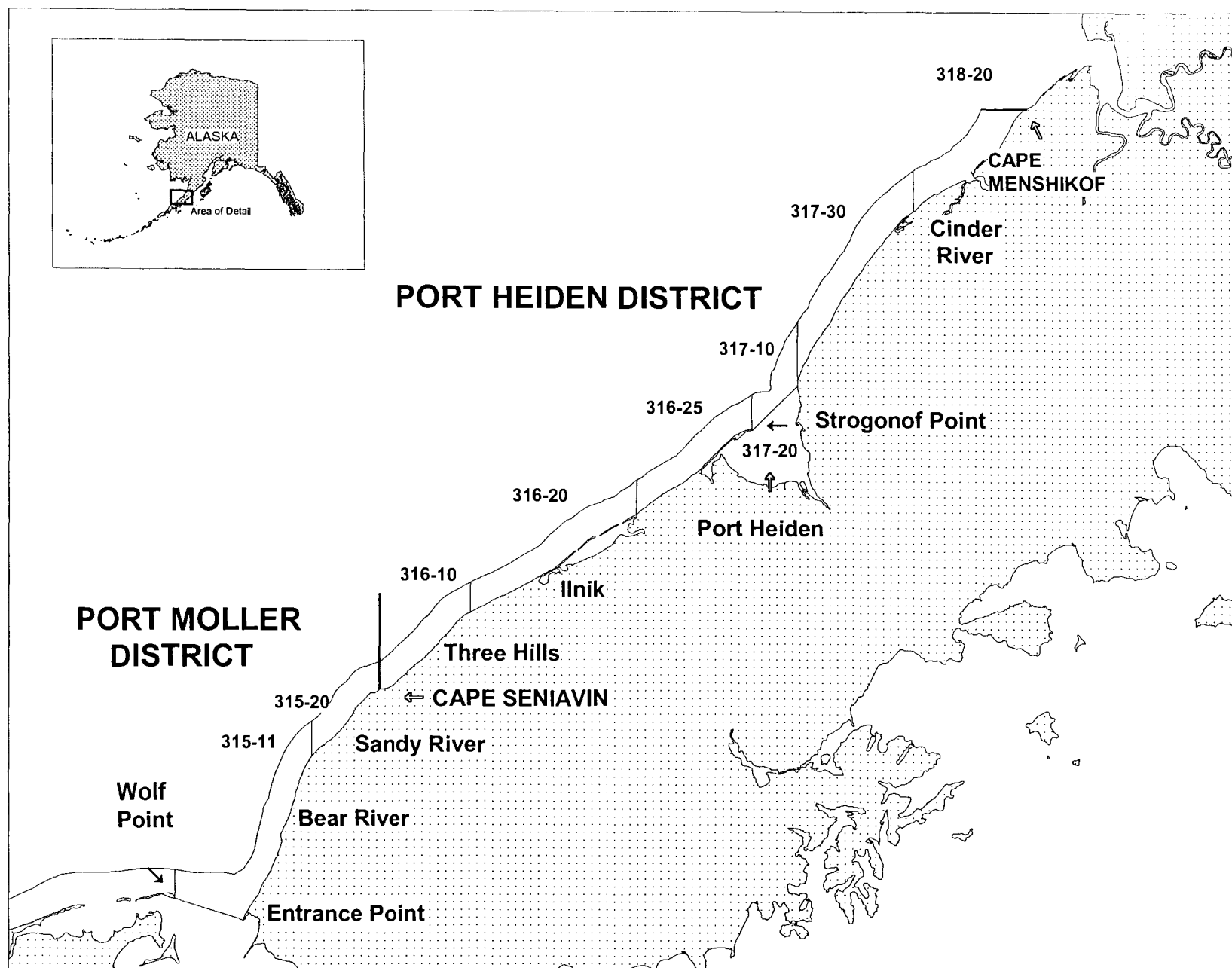


Figure 7. Map of the Alaska Peninsula from Entrance Point to Cape Menshikof with commercial herring fishing statistical areas.

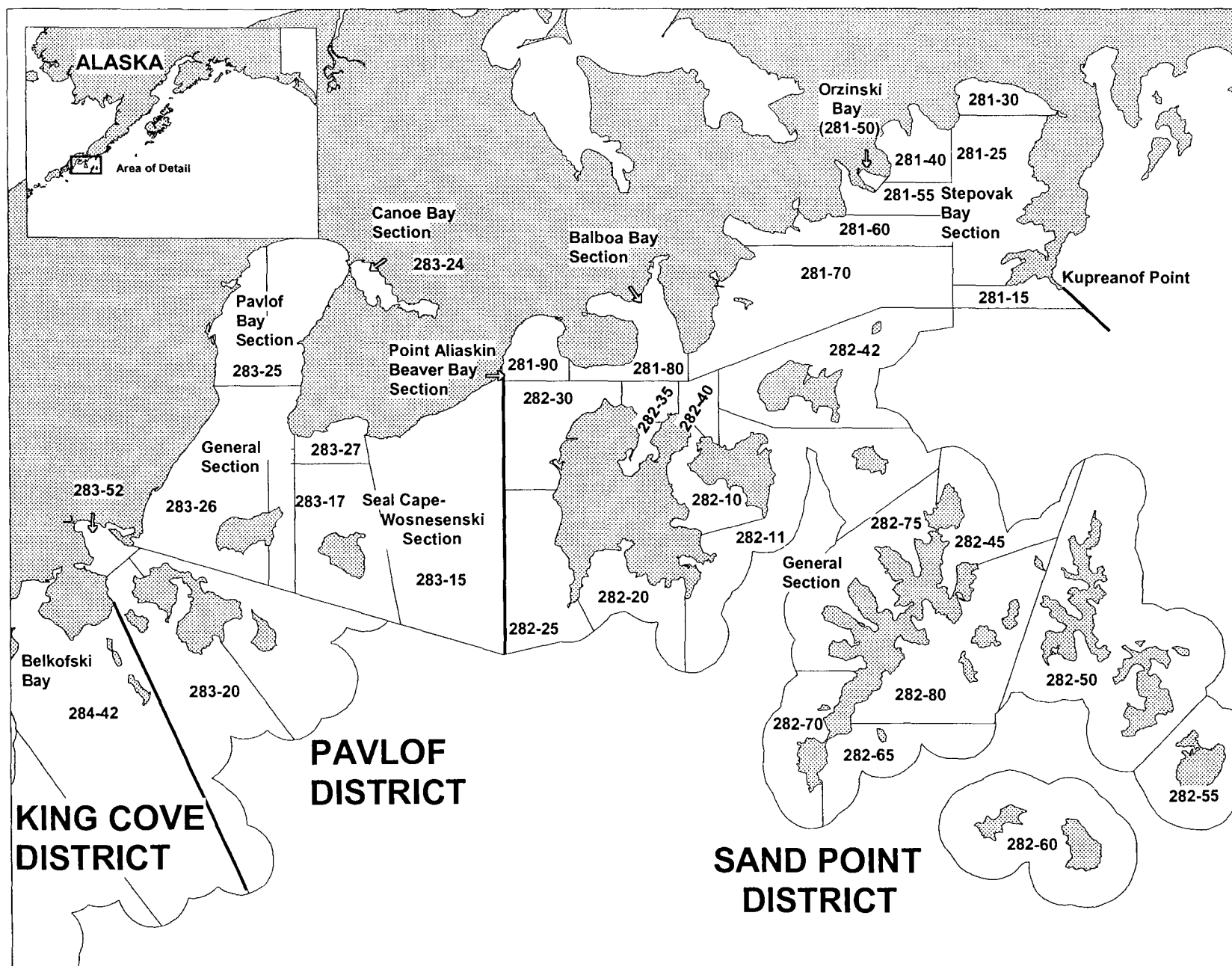


Figure 8. Map of the Alaska Peninsula from Belkofski Bay to Kupreanof Point with commercial herring fishing statistical areas.

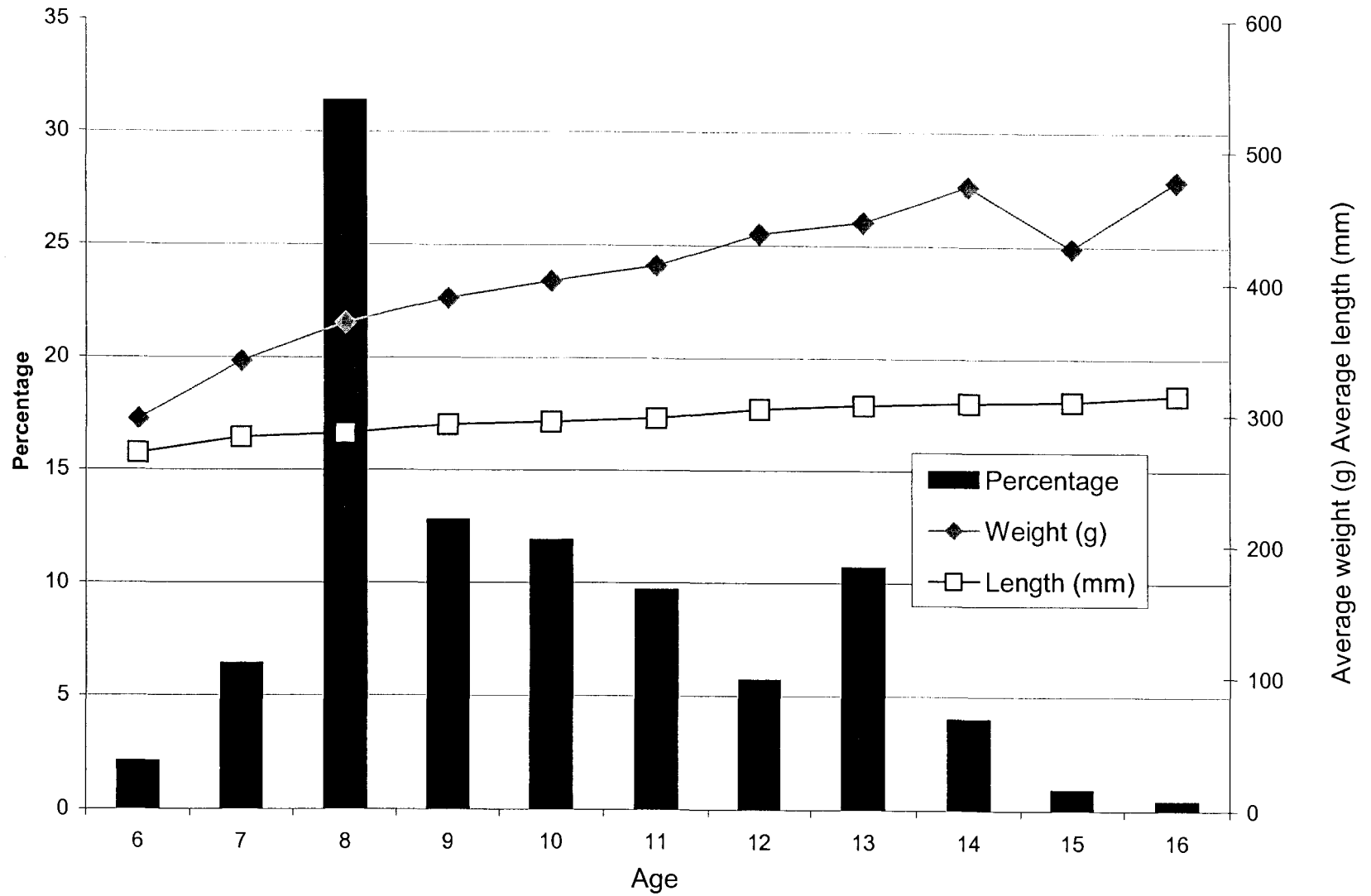


Figure 9. Average length at age (mm), average weight at age (g), and percent of each age class present in the Alaska Peninsula and Aleutian Islands Management Area, herring food and bait fishery, 2001.

APPENDIX

Appendix A. Emergency order summary, 2001.

ALASKA PENINSULA-ALEUTIAN ISLANDS MANAGEMENT AREA

EMERGENCY ORDER NO. 4-FH-M-SP-01-01

EFFECTIVE DATE: NOON Monday June 25, 2001

EXPLANATION: This emergency order allows commercial herring fishing by gillnet gear in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Alaska Peninsula-Aleutian Islands Herring Management Area from NOON June 25 until NOON June 26, 2001.

JUSTIFICATION: During the January 2001 Alaska Board of Fisheries meeting regulations were adopted allowing a commercial herring food and bait fishing season specific to gillnet gear. Regulation 5 AAC 27.610 (e)(2)(A) established a commercial herring fishing season, by gillnet gear beginning June 24. Gillnet gear is allocated seven percent of the total Dutch Harbor herring food and bait allocation as established under 5 AAC 27.655 (a)(2).

Three permit holders and one processor are currently registered for the gillnet fishery and herring are present in the Aleutian Islands area.

A commercial herring fishing period for gillnet gear will allow fisherman to harvest herring toward the 2001 allocation of approximately 110 tons.

EMERGENCY ORDER NO. 4-FH-M-SP-02-01

EFFECTIVE DATE: NOON Tuesday June 26, 2001

EXPLANATION: This emergency order allows a 48-hour extension of the current commercial herring gillnet fishing period in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Alaska Peninsula-Aleutian Islands Herring Management Area from NOON Tuesday June 26 until NOON Thursday June 28, 2001.

JUSTIFICATION: During the January 2001 Alaska Board of Fisheries meeting regulations were adopted allowing a commercial herring food and bait fishing season specific to gillnet gear. Regulation 5 AAC 27.610 (e)(2)(A) established a commercial herring fishing season, by gillnet gear beginning June 24. Gillnet gear is allocated seven percent of the total Dutch Harbor herring food and bait allocation as established under 5 AAC 27.655 (a)(2).

Three permit holders and one processor are currently registered for the fishery and herring are present in the Aleutian Islands area. Harvest reports from the June 25 fishing period indicate a preliminary harvest of 2.7 tons.

A commercial herring fishing period for gillnet gear will allow fisherman to harvest herring toward the remaining 2001 allocation of approximately 107 tons.

EMERGENCY ORDER NO. 4-FH-M-SP-03-01

EFFECTIVE DATE NOON Thursday June 28, 2001

EXPLANATION: This emergency order allows a 24-hour extension of the current commercial herring gillnet fishing period in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Alaska Peninsula-Aleutian Islands Herring Management Area from NOON Thursday June 28 until NOON Friday June 29, 2001.

Continued-

Appendix A. (page 2 of 4)

JUSTIFICATION: During the January 2001 Alaska Board of Fisheries meeting regulations were adopted allowing a commercial herring food and bait fishing season specific to gillnet gear. Regulation 5 AAC 27.610 (e)(2)(A) established a commercial herring fishing season, by gillnet gear beginning June 24. Gillnet gear is allocated seven percent of the total Dutch Harbor herring food and bait allocation as established under 5 AAC 27.655 (a)(2).

Six permit holders and one processor are currently registered for the fishery and herring are present in the Aleutian Islands area. Harvest reports from the June 27 fishing period indicate a preliminary total fishery harvest of 26 tons.

A commercial herring fishing period for gillnet gear will allow fisherman to harvest herring toward the remaining 2001 allocation of approximately 83 tons.

EMERGENCY ORDER NO. 4-FH-M-SP-04-01

EFFECTIVE DATE NOON Friday June 29, 2001

EXPLANATION: This emergency order allows a 24-hour extension of the current commercial herring gillnet fishing period in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Alaska Peninsula-Aleutian Islands Herring Management Area from NOON Friday June 29 until NOON Saturday June 30, 2001.

JUSTIFICATION: During the January 2001 Alaska Board of Fisheries meeting regulations were adopted allowing a commercial herring food and bait fishing season specific to gillnet gear. Regulation 5 AAC 27.610 (e)(2)(A) established a commercial herring fishing season, by gillnet gear beginning June 24. Gillnet gear is allocated seven percent of the total Dutch Harbor herring food and bait allocation as established under 5 AAC 27.655 (a)(2).

Eight permit holders and one processor are currently registered for the fishery and herring are present in the Aleutian Islands area. Harvest reports from the June 28 fishing period indicate a preliminary total fishery harvest of 34 tons.

A commercial herring fishing period for gillnet gear will allow fisherman to harvest herring toward the remaining 2001 allocation of approximately 76 tons.

EMERGENCY ORDER NO. 4-FH-M-SP-05-01

EFFECTIVE DATE 2:00 PM Saturday June 30, 2001

EXPLANATION: This emergency order allows a 24-hour commercial herring gillnet fishing period in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Alaska Peninsula-Aleutian Islands Herring Management Area from 2:00 PM Saturday June 30 until NOON Sunday July 1, 2001.

JUSTIFICATION: During the January 2001 Alaska Board of Fisheries meeting regulations were adopted allowing a commercial herring food and bait fishing season specific to gillnet gear. Regulation 5 AAC 27.610 (e)(2)(A) established a commercial herring fishing season, by gillnet gear beginning June 24. Gillnet gear is allocated seven percent of the total Dutch Harbor herring food and bait allocation as established under 5 AAC 27.655 (a)(2).

Eight permit holders and one processor are currently registered for the gillnet fishery and herring are present in the Aleutian Islands area. Harvest reports from the June 29 fishing period indicate a preliminary total fishery harvest of 69 tons.

A commercial herring fishing period for gillnet gear will allow fisherman to harvest herring toward the remaining 2001 allocation of approximately 41 tons.

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Appendix A. (page 3 of 4)

EMERGENCY ORDER NO. 4-FH-M-SP-06-01

EFFECTIVE DATE 2:00 PM Wednesday July 11, 2001

EXPLANATION: This emergency order allows a 22-hour commercial herring gillnet fishing period in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Alaska Peninsula-Aleutian Islands Herring Management Area from 2:00 PM Wednesday July 11 until NOON Thursday July 12, 2001.

JUSTIFICATION: During the January 2001 Alaska Board of Fisheries meeting regulations were adopted allowing a commercial herring food and bait fishing season specific to gillnet gear. Regulation 5 AAC 27.610 (e)(2)(A) established a commercial herring fishing season, by gillnet gear beginning June 24. Gillnet gear is allocated seven percent of the total Dutch Harbor herring food and bait allocation as established under 5 AAC 27.655 (a)(2).

All gillnet fishery participants reached a cooperative agreement to allow one permit holder to harvest the remaining herring gillnet allocation. Herring are present in the Aleutian Islands area. Harvest reports to date indicate a total fishery harvest of 98 tons.

A commercial herring fishing period for gillnet gear will allow the participating permit holder to harvest herring toward the remaining 2001 allocation of approximately 12 tons.

EMERGENCY ORDER NO. 4-FH-M-SP-07-01

EFFECTIVE DATE 4:00 PM Thursday July 12, 2001

EXPLANATION: This emergency order allows a 20-hour commercial herring gillnet fishing period in the Unimak, Akutan, Unalaska, Umnak, and Adak Districts of the Alaska Peninsula-Aleutian Islands Herring Management Area from 4:00 PM Thursday July 12 until NOON Friday July 13, 2001.

JUSTIFICATION: During the January 2001 Alaska Board of Fisheries meeting regulations were adopted allowing a commercial herring food and bait fishing season specific to gillnet gear. Regulation 5 AAC 27.610 (e)(2)(A) established a commercial herring fishing season, by gillnet gear beginning June 24. Gillnet gear is allocated seven percent of the total Dutch Harbor herring food and bait allocation as established under 5 AAC 27.655 (a)(2).

All gillnet fishery participants reached a cooperative agreement to allow one permit holder to harvest the remaining herring gillnet allocation. Herring are present in the Aleutian Islands area. Harvest reports to date indicate a total fishery harvest of 106 tons.

A commercial herring fishing period for gillnet gear will allow the participating permit holder to harvest herring toward the remaining 2001 allocation of approximately 4 tons.

EMERGENCY ORDER NO. 4-FH-M-SP-08-01

EFFECTIVE DATE 12:20 PM Sunday July 15, 2001

EXPLANATION: This emergency order allows a 10-minute commercial herring food and bait seine fishing period from 12:20 PM to 12:30 PM Sunday July 15, 2001 in the Unalaska District of the Alaska Peninsula-Aleutian Islands Management Area. Open waters will be those of Captains Bay west of 166°33.20' W. longitude and also those of Unalaska Bay south of a line that extends from the northern end of the Dutch Harbor airport runway at 53°54.38' N. latitude, 166°32.90' W. longitude, to the southern tip of Hog Island at 53°53.80' N. latitude, 166°34.20' W. longitude, to the western entrance of Captains Bay at 53°52.90' N. latitude, 166°34.50' W. longitude.

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JUSTIFICATION: The “Dutch Harbor” food and bait herring fishery is managed on the basis of the Togiak herring biomass as described under 5 AAC 27.060, the Bering Sea Herring Management Plan. The department shall manage the Dutch Harbor fishery so that it is allocated seven percent of the allowable Togiak District herring sac roe harvest determined under the provisions of the Bristol Bay Herring Management Plan (5 AAC 27.865) and the allocative requirements of the Dutch Harbor Food and Bait Herring Fishery Allocation Plan (5 AAC 27.655).

The 2001 Dutch Harbor herring food and bait seine allocation is 1,462 tons. Effort consists of 14 purse seine vessels, 10 tenders representing three processing companies, and six aircraft. The processing capacity is an estimated 1,300 tons. Based on department aerial surveys and vessel sonar reports, herring are present in the Unalaska Bay Section. A 10-minute fishing period in the described waters will allow the fleet the opportunity to harvest herring toward the “Dutch Harbor” food and bait seine fishery allocation.

EMERGENCY ORDER NO. 4-FH-M-SP-09-01

EFFECTIVE DATE 5:00 PM Monday July 16, 2001

EXPLANATION: This emergency order allows a commercial herring food and bait fishing period for seine vessels participating in the cooperative fishery from 5:00 PM to 11:59 PM Monday July 16, 2001 in the Unalaska District of the Alaska Peninsula-Aleutian Islands Management Area in waters of the Unalaska Bay Section.

JUSTIFICATION: The “Dutch Harbor” food and bait herring fishery is managed on the basis of the Togiak herring biomass as described under 5 AAC 27.060, the Bering Sea Herring Management Plan. The department shall manage the Dutch Harbor fishery so that it is allocated seven percent of the allowable Togiak District herring sac roe harvest determined under the provisions of the Bristol Bay Herring Management Plan (5 AAC 27.865) and the allocative requirements of the Dutch Harbor Food and Bait Herring Fishery Allocation Plan (5 AAC 27.655).

The 2001 Dutch Harbor herring food and bait seine allocation is 1,462 tons. Effort consists of 14 purse seine vessels, 10 tenders representing three processing companies, and six aircraft. The processing capacity is an estimated 1,300 tons. Based on department aerial surveys and vessel sonar reports, herring are present in the Unalaska Bay Section.

The 14 participating seine fishery permit holders reached a cooperative agreement to harvest the approximately 600 tons of herring remaining to reach desired processor capacity. Vessels have agreed to have one vessel set at a time under Alaska Department of Fish and Game (ADF&G) direction. The ADF&G will receive a preliminary assessment of biomass harvested from one set prior to allowing any subsequent sets.

Approximately 737 tons of herring remain on the “Dutch Harbor” food and bait seine fishery allocation. The fleet is attempting to fill the desired capacity of processors of 600 tons. A fishing period is needed to enable the fleet to harvest herring toward the allocation under guidelines established within the cooperative agreement.

Appendix B. Partial listing of herring regulations, 2001.

ARTICLE 2. - GENERAL SPECIFICATIONS.

5 AAC 27.060. BERING SEA HERRING FISHERY MANAGEMENT PLAN.

- (a) The department shall follow the directives of the Bering Sea Herring Management Plan, as well as the regulations that govern the individual herring fisheries, when managing the commercial herring fisheries that take place in the Bering Sea.
- (b) Unless otherwise specified in this chapter, the department shall manage the fisheries so that the exploitation rate on eastern Bering Sea herring stocks does not exceed 20 percent of the biomass of those stocks.
- (c) The following thresholds are minimum biomass levels for each herring fishing district. When the department estimates, in season, that the biomass in a district is below its threshold, the department may not allow a commercial harvest of herring in that district.

<u>District</u>	<u>Thresholds (s.t.)</u>
Port Moller	1,000
Togiak	35,000
Security Cove	1,200
Goodnews Bay	1,200
Cape Avinof	500
Nelson Island	3,000
Nunivak Island	1,500
Cape Romanzof	1,500
Norton Sound	7,000

- (d) The department shall manage the food and bait herring fishery that takes place in the Unimak, Akutan, and Unalaska Districts and that portion of the Umnak District east of Samalga Pass (Dutch Harbor fishery) so that it is allocated seven percent of the allowable Togiak District sac roe herring harvest determined under the provisions of the Bristol Bay Herring Management Plan (5 AAC 27.865).
- (g) When the Togiak District is below its threshold, the Dutch Harbor fishery will be closed for that season.
- (h) When any of the southwest Alaska herring stocks, from Security Cove to Port Clarence, is below its threshold, identified in (c) of this section, the department shall close the Dutch Harbor food and bait herring fishery for that season. For the purpose of determining the need for this closure, the threshold level for the Nelson Island herring stock is 2,000 short tons. If the department determines it necessary to close the Dutch Harbor food and bait herring fishery under this subsection, the department shall not reallocate the herring harvest set for the Dutch Harbor food and bait herring fishery, under 5 AAC 27.865 (b)(7), to the Togiak sac roe herring fishery.

ARTICLE 12. - STATISTICAL AREA T; BRISTOL BAY AREA

5 AAC 27.865. BRISTOL BAY HERRING MANAGEMENT PLAN (a) When managing the Bristol Bay commercial herring fishery, the primary objectives of the department will be to prosecute an orderly and manageable fishery, while striving for the highest level of product quality with a minimum of waste.

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- (b) To ensure that no gear group is totally disadvantaged, the Board of Fisheries directs the department to take the following actions given the specified circumstances.
 - (1) When circumstances preclude the department from adequately assessing the biomass, the fishery shall be managed for an exploitation based on the pre-season projected return.
 - (3) Whenever possible, openings for both gear types must begin during the hours of daylight, and special consideration will be given to afford the maximum amount of daylight.
 - (4) The department may allow only one gear type to operate in an area during any open period.
 - (5) Repealed 4/7/90
 - (6) Repealed 4/7/90
 - (7) The maximum exploitation rate for the Bristol Bay herring stock is 20 percent. Before opening the sac roe fishery, the department shall set aside approximately 1,500 short tons for the Togiak district herring spawn-on-kelp fishery, and seven percent of the remaining available harvest for the Dutch Harbor food and bait fishery.
 - (8) After the spawn-on-kelp harvest and the Dutch Harbor food and bait fishery have been subtracted, the remaining harvestable surplus is allocated to the sac roe fishery. The department shall manage for a removal of 25 percent of that surplus by the gillnet fleet and 75 percent by the purse seine fleet.
 - (9) If a manageable separation of the year classes occurs, an exploitation rate of up to 20 percent may be allowed on the younger age herring (4 years or less), and no fishery will be considered if this recruit population is less than 20,000 short tons.
 - (10) Late season (post-peak) sac roe openings must be based on one or more of the following criteria:
 - (A) a definable increase in the biomass of herring present on the fishing grounds;
 - (B) a major shift in the age composition of the herring in a definable biomass that is large enough to allow a harvest; and
 - (C) a major improvement in the roe maturity of fish sampled over a broad area, indicating the arrival of a quantity of new herring.

ARTICLE 10. - STATISTICAL AREA M; ALASKA PENINSULA-ALEUTIAN ISLANDS AREA.

5 AAC 27.600. DESCRIPTION OF AREA. Statistical area M includes all waters bound on the east by a line extending southeast (135°) from the southernmost tip of Kupreanof Point, on the west by the International Date Line, and on the north by a line extending west from the westernmost tip of Cape Menshikof.

5 AAC 27.605. DESCRIPTION OF DISTRICTS AND SECTIONS.

- (a) Sand Point District: all waters on the south (Pacific) side of the Alaska Peninsula west of a line extending from 135° from Kupreanof Point (55°34'N.lat, 159°36' W. long.), and east of 160°59' W. long. (longitude of McGinty Point). Sections are as follows:

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- (1) Stepovak Bay Section: all waters of the Sand Point District located west of a line extending 135° from Kupreanof Point 55°34' N. lat., 159°36' W. long., north of a line from approximately two nautical miles south of 135° from Kupreanof Point, west to 55°32'12" N. lat., 160°02'36" W. long., (approximately one nautical mile north of Karpa Island), and west to 55°26' N. lat, 160°31'30" W. long., (approximately two nautical miles south of the longitude of Swedania Point 160°31'30" W. long.).
 - (2) Swedania Point-Balboa Bay Section: all waters of the Sand Point District located between 160°31'30" W. long. and 160°49' W. long., and north of 55°26' N. lat.
 - (3) Point Aliaksin-Beaver Bay Section: all waters of the Sand Point District located between 160°49' W. long. and 161°59' W. long., and north of 55°26' N. lat.
 - (4) General section: all other waters of the Sand Point District.
- (b) Pavlof District: all waters on the south (Pacific) side of the Alaska Peninsula between 160°59' W. long. and a line extending 150° from 55°05'54" N. lat., 161°59' W. long. through Inner and Outer Iliasik Islands, including Bear and Volcano Bays.
- (1) Canoe Bay Section: all waters of Canoe Bay east of 161°21'45" W. long.
 - (2) Pavlof Bay Section: all waters of Pavlof Bay north of 55°21'42" N. lat. (latitude of Cape Tolstoi), excluding the Canoe Bay and Seal Cape-Wosnesenski Sections.
 - (3) Seal Cape-Wosnesenski Section: all waters of the Pavlof District located between 160° 59' W. long. and 161°30" W. long. (longitude of Cape Tolstoi).
 - (4) General section: all other waters of the Pavlof District.
- (c) King Cove District: all waters of the south (Pacific) side of the Alaska Peninsula between a line extending 150° from 55°05'54" N. lat., 161°59' W. long. through Inner and Outer Iliasik Islands and 163°30' W. long., including waters of Isanotski Strait south of a line from Nichols Point to the False Pass dock.
- (1) Belkofski Section: all waters of the King Cove District east of 162°15'W. long. (longitude of Bold Cape).
 - (2) Deer Passage Section: all waters of the King Cove District between 162°15' W. long. (longitude of Bold Cape) and 162°25' W. long (longitude of Vodapoini Point), and north of 54°55' N. lat., excluding all waters of Lenard Harbor.
 - (3) Cold Bay Section: all waters of the King Cove District bounded by a line from Thin Point to Vodapoini Point.
 - (4) General section: all other waters of the King Cove District.
- (d) Unimak District: all waters on the southside of Unimak Island between 163°30' W. long. and the longitude of Scotch Cap Light.
- (e) Akutan District: all waters extending west of Unimak Island to and including Akutan Pass.
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- (f) Unalaska District: all waters west of Akutan Pass to and including Umnak Pass.
 - (1) Unalaska Bay Section: all waters of the Unalaska Bay District enclosed by a line from Priest Rock at 54°00'24" N. lat., 166°22'42" W. long. to Cape Cheerful at 54°00'33" N. lat., 166°37'45" W. long.
 - (2) General Section: all waters of the Unalaska District not included in the Unalaska Bay Section.
- (g) Umnak District: all waters west of Umnak Pass to and including Atka Pass.
- (h) Adak District: all waters west of Atka Pass to the terminus of the Aleutian Islands.
 - (i) Amak District: all Bering Sea waters south and west of Cape Lieskof (55°47' N. lat., 162°04' W. long.) to the longitude of Cape Sarichef Light, including all waters of Bechevin Bay and Isanotski Strait north of a line from the False Pass Cannery dock to the tip of Nichols Point.

Port Moller District: all Bering Sea waters between the longitude of Cape Lieskof (162° 04.00' W. long.) and the longitude of Cape Seniavin (160° 08.80' W. long.). Sections are as follows:

- (1) Western Section: all waters of the Port Moller District west of the longitude of Wolf Point on Walrus Island, excluding the waters of Herendeen Bay and Deer Island-Mud Bay Sections;
- (2) Deer Island-Mud Bay Section: all waters of the Port Moller District bounded by a line from the northernmost tip of Point Edward to the southernmost tip of Wolf Point on Walrus Island to Point Divide (55° 53.10' N. lat., 160° 47.30' W. long.) to the northernmost tip of Black Point;
- (3) Herendeen Bay Section: all waters of Herendeen Bay south of a line from the northernmost tip of Black Point to Point Divide (55° 53.10' N. lat., 160° 47.30' W. long.);
- (4) Inner Port Moller Bay Section: all waters of Port Moller Bay enclosed by a line from Point Divide (55° 53.10' N. lat., 160° 47.30' W. long.) to Harbor Point (55° 54.90' N. lat., 160° 34.70' W. long.);
- (5) Outer Port Moller Bay Section: all waters of the Port Moller District south and east of a line from Point Divide (55° 53.10' N. lat., 160° 47.30' W. long.) to the southernmost tip of Wolf Point on Walrus Island to the southernmost tip of Entrance Point (55° 58.70' N. lat., 160° 34.80' W. long.);
- (6) Bear River Section: all Bering Sea waters between the longitude of Wolf Point on Walrus Island and Cape Seniavin Light, excluding the waters of the Herendeen Bay, Deer Island-Mud Bay, Outer Port Moller Bay, and Inner Port Moller Bay Sections.

Port Heiden District: all Bering Sea waters between the longitude of Cape Seniavin (160° 08.80' W. long.) and the latitude of Cape Menshikof (57° 31.33' N. lat.).

5 AAC 27.610. FISHING SEASONS AND PERIODS FOR ALASKA PENINSULA-ALEUTIAN ISLANDS AREA. (a) In the Sand Point, Pavlof, King Cove, Amak, Port Moller, and Port Heiden Districts, herring may be taken from April 15 through July 15 (sac roe season) only during fishing periods established by emergency order.

- (b) Repealed 4/2/88.
- (c) Repealed 5/2/92.
- (d) Repealed 5/31/98.
- (e) In the Unimak, Akutan, Unalaska, Umnak, and Adak Districts, herring may be taken only during fishing periods established by emergency order as follows:
 - (1) in the sac roe fishery, from April 15 through 12:00 noon, July 24;
 - (2) in the food and bait fishery,

-Continued-

Appendix B. (page 5 of 6)

(A) by gillnets, from 12:00 noon June 24 through February 28; and

(B) by purse seines, from 12:00 noon July 15 through February 28.

A CFEC permit holder must register with the department before participating in the food and bait fishery.

5 AAC 27.630. LAWFUL GEAR FOR ALASKA PENINSULA-ALEUTIAN ISLANDS AREA. Herring may be taken only by purse seines and gillnets.

5 AAC 27.631. GILLNET SPECIFICATIONS AND OPERATIONS FOR ALASKA PENINSULA-ALEUTIAN ISLANDS AREA. (a) During the herring gillnet fishery, the aggregate length of gillnets operated by a CFEC permit holder may not exceed 150 fathoms.

(b) The interim-use or entry permit holder must be physically present while the gillnet is being fished.

(c) Each drift gillnet in operation must have a buoy at one end and the opposite end must be attached to the fishing vessel. Each set gillnet in operation must be anchored and buoyed at both ends. Each buoy must be plainly and legibly marked with the permanent vessel license plate number (ADF&G number) of the vessel operating the gear. The buoy may bear only a single number and this number must be that of the vessel used in operating the gear. The numbers must be painted on the top one-third of the buoy in numerals at least four inches in height, one-half inch in width and in a color contrasting to that of the buoy. The buoy markings must be visible on the buoy above the water surface.

(d) Notwithstanding 5 AAC 27.050(c), gillnet mesh sizes from two and one-half to three inches may be used only under the authority of a permit issued by the department.

5 AAC 27.632. SEINE SPECIFICATIONS AND OPERATIONS FOR ALASKA PENINSULA-ALEUTIAN ISLANDS AREA. During the herring sac roe season, a purse seine may not be more than 1,000 meshes in depth and more than 100 fathoms in length. During the herring food and bait season, a purse seine may not be more than 250 fathoms in length.

5 AAC 27.650. WATERS CLOSED TO HERRING FISHING IN ALASKA PENINSULA-ALEUTIAN ISLANDS AREA. (a) Herring may not be taken from June 25 through September 30 in the closed waters described in 5 AAC 09.350.

(b) Repealed 4/16/83.

5 AAC 27.655. DUTCH HARBOR FOOD AND BAIT HERRING FISHERY ALLOCATION PLAN. (a) The herring available for harvest in the Dutch Harbor food and bait herring fishery under 5 AAC 27.865(b)(7) shall be allocated as follows:

(1) 93 percent to herring seine fishery;

(2) seven percent to the herring gillnet fishery.

(b) The allocations of herring to the herring seine fishery and to the herring gillnet fishery under (a) of this section are independent of each other. If the harvest by a fishery in a given year is greater than the amount allocated to that fishery under (a) of this section, the excess tonnage is subtracted from the following year's allocation to that fishery. If the harvest by a fishery in a given year is less than the amount allocated to that fishery under (a) of this subsection, no effect on future allocations to that fishery will occur.

(c) For purposes of this section, "Dutch Harbor food and bait fishery" is the herring food and bait fishery that occurs during the seasons described in 5 AAC 27.610(e).

5 AAC 27.660. HARVEST STRATEGY. (a) Repealed 4/2/88.

(b) Repealed 5/2/92.

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5 AAC 27.662. BUYER AND TENDER REPORTING REQUIREMENTS FOR ALASKA PENINSULA-ALEUTIAN ISLANDS AREA. In addition to the requirements of 5 AAC 39.130(g), each tender operator and each buyer or the tender operator or buyer's agent shall report in person to and register with a local representative of the department upon arrival in the registration area before commencing operations and before changing location of the operation. Each buyer or buyer's agent shall

(1) identify all vessels to be employed in transporting or processing herring and shall register those vessels with a local representative of the department located in the registration area before transporting or processing of herring;

(2) make daily reports of all herring purchased from fishermen, and other processing records as specified by a local representative of the department; and

(3) submit fish tickets before departure from the area and no later than 10 days after termination of buying operations in the area, or as otherwise specified by a local representative of the department.

Appendix C. Aleutian Islands "Dutch Harbor" herring food and bait forecast, 2001.

This forecast is for the "Dutch Harbor": Unimak, Akutan, and Unalaska Districts and that portion of the Umnak District located east of Samalga Pass, food and bait herring fishery (Kathy Rowell, ADF&G, Anchorage, memo Nov. 30, 2000).

1,572 tons of herring is allocated to the "Dutch Harbor" food and bait herring fishery for 2001 using the Bering Sea Herring Management Plan allocation formula, as follows, given the maximum 20% exploitation rate of the projected biomass:

*Harvest Allocation of the 2001 Forecasted Pacific
Herring Run Biomass, Togiak District, Bristol Bay*

	Biomass (Short Tons)	Harvest (Short Tons)
<hr/>		
2001 Forecasted Biomass	119,818	
Exploitation @ maximum 20% for Total Allowable Harvest		23,964
Togiak Spawn-on-Kelp Fishery (Fixed Allocation)		1,500
Remaining Allowable Harvest		22,464
Dutch Harbor Food/Bait Allocation (7.0% of the remaining allocation)		1,572
Remaining Allowable Harvest for Togiak District Sac Roe Fishery:		20,892

Appendix D. Alaska Peninsula herring sac roe fishery forecast, 2002.

This forecast is for North and South Alaska Peninsula areas with guideline harvest levels, excluding those areas open for exploration such as the General Section of the Sand Point District, Seal Cape-Wosnesenski Section, the General Section of the King Cove District, Amak District, and the Western Section of the Port Moller District. This forecast does not include the Aleutian Islands Management Area, which has no history of sac roe herring harvests, nor the Port Heiden District which had a commercial harvest only during 1992.

The 2001 North Peninsula forecasted harvest between 0 and 150 tons is expected to be taken in the Port Moller District. This forecast is based on the 2001 biomass estimate. A sliding scale exploitation rate is applied to the estimate while considering historic harvests in the district. Seven aerial surveys in 2001 resulted in an observed biomass of 2,315 tons. Adjustments to the guideline harvest level will be made inseason once herring biomass is quantified. The following table shows the sliding scale allowable harvest on the estimated mature biomass when it is assumed the threshold of 1,000 tons will be reached.

Stock Size (Short Tons)	Sliding Scale Exploitation Rate	Allowable Harvest
Less than 1,000	0%	0
1,001-1,500	10%	100-150
1,501-1,999	10%	150-200
2,000-2,500	15%	300-375
2,501-3,000	15%	375-450
> 3,000	20%	> 450

At low biomass levels, a conservative approach will be taken to allow the local stocks to rebuild and to account for North Peninsula herring that may contribute to the Dutch Harbor food and bait fishery. Rowell et. al. (1990) estimated that up to 22% of the Dutch Harbor food and bait harvest may be non-Togiak herring. Based on estimated travel time of eastern Bering Sea herring stocks to Dutch Harbor and the fishery opening date of July 16, North Peninsula stocks may compose a portion of the non-Togiak component. During periods when large biomass levels are observed a higher harvest rate will be allowed. Based on Alaska Board of Fisheries findings, exploitation rate may not exceed 20% of the mature biomass of those stocks. The forecast does not include the Port Heiden District where commercial fishing occurred only during 1992. No age class data were available in 2001.

In the Port Moller District, a 1,000 ton threshold of mature herring is required before the department may allow a commercial harvest in that district. In prior years it was assumed that the threshold requirements were achieved before aerial surveys were conducted. However, in 1996 biomass surveys were conducted earlier than normal with no herring observed during the initial surveys.

The 2002 South Peninsula forecasted sac roe harvest is 0 tons. It is anticipated that industry will not be interested in harvesting herring in South Peninsula waters in 2002. No age class data were available in 2001, so it is unknown what age classes will dominate the 2002 stocks.

Appendix E. Estimated age composition of North Peninsula commercial purse seine herring sac roe fishery harvests by area and percent, 1985-2001.

Area	Year	Percent at age (Years)									
		2	3	4	5	6	7	8	9	10	11+
Herendeen Bay Section											
	1985	0	5	49	21	15	6	4	0	0	0
	1986	0	0	3	25	13	20	21	17	1	0
	1987	0	2	4	22	24	17	13	10	6	2
	1988	0	3	23	30	22	9	4	3	3	2
	1989	0	0	2	62	22	5	1	1	0	7
	1990	0	14	3	1	57	15	3	1	1	5
	1991	0	2	72	5	2	11	4	0	2	3
	1992				No harvest in this section						
	1993				No harvest in this section						
	1994				No harvest in this section						
	1995	0	5	22	42	17	7	2	0	0	5
	1996	1	60	20	7	7	4	1	0	0	0
	1997-2001				No harvest in this section						
Deer Island-Mud Bay Sections											
	1991	0	1	65	7	3	18	5	0	1	1
	1992	0	0	17	64	5	2	6	3	2	2
	1993-2001				No harvest in this section						
Inner Port Moller Bay Section											
	1985	0	1	12	8	15	33	27	2	0	1
	1986	0	1	7	21	12	18	19	20	1	1
	1987	0	2	11	13	22	12	11	17	11	0
	1988	0	1	30	29	12	6	5	5	8	5
	1989	0	1	1	67	19	3	1	2	2	4
	1990	0	13	4	2	49	16	5	2	2	6
	1991	0	1	59	13	2	16	1	5	2	1
	1992	0	0	23	60	4	2	6	2	1	2
	1993	0	0	0	10	48	5	2	17	8	10
	1994	0	0	3	12	19	46	4	1	10	6
	1995	0	1	2	8	16	23	38	3	4	6
	1996				No harvest in this section						
	1997				No harvest in this section						
	1998	0	0	6	65	5	12	6	3	3	0
	1999-2001				No harvest in this section						
Outer Port Moller Bay											
	1985	0	1	26	16	20	17	17	1	1	0
	1986	0	0	2	22	13	21	23	18	1	0
	1987	0	2	48	9	14	5	11	8	3	0
	1988				No harvest in this section						
	1989	0	0	0	6	26	6	24	7	10	21
	1990 ^a	90	10	0	0	0	0	0	0	0	0
	1991	0	3	74	6	1	11	2	1	1	0
	1992	0	2	41	49	2	0	2	2	0	2
	1993				No samples from this section						
	1994	0	0	8	8	0	54	0	0	23	8

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Area	Year	Percent at age (Years)									
		2	3	4	5	6	7	8	9	10	11+
Outer Port Moller Bay (Cont.)											
	1995				No samples from this section						
	1996 ^a	0	50	28	14	5	0	3	0	0	0
	1997				No harvest in this section						
	1998	1	1	4	41	13	18	10	4	4	3
	1999-2001				No harvest in this section						
Bering Sea Coast											
Bear River area											
	1991	0	2	86	8	0	4	1	0	0	1
	1992				No harvest in this section						
	1993				No samples from this section						
	1994-97				No harvest in this section						
	1998	0	0	0	68	5	16	3	3	5	0
	1999-2001				No harvest in this section						
Cape Kutuzof area											
	1991	0	0	37	10	0	40	9	2	2	2
	1992-2001				No harvest in this section						
Port Heiden Bay Section											
	1992	0	0	9	64	5	1	13	2	1	4
	1993-2001				No harvest in this section						

^a Juvenile herring sample.

Appendix F. Estimated age composition of South Peninsula commercial purse seine herring sac roe fishery harvests by area and percent, 1985-2001.

Year	Percent at age (Years)									
	2	3	4	5	6	7	8	9	10	11
Stepovak Bay										
1985	No samples									
1986-87	No Harvest in this section									
1988	0	5	78	17	0	0	1	0	0	0
1989	0	3	31	50	13	0	0	0	2	0
1990	1	6	8	28	50	7	1	0	1	1
1991 ^a	0	4	13	6	23	42	13	0	0	0
1992	No Harvest in this section									
1993 ^a	No samples									
1994-95	No Harvest in this section									
1996	No samples									
1997-2001	No Harvest in this section									
Balboa										
1988	0	32	50	9	0	1	3	1	2	3
1989	No samples									
1990	0	4	7	22	59	4	0	4	0	0
1991	0	16	11	16	26	32	0	0	0	0
1992-94	No Harvest in this section									
1995	No samples									
1996	No samples									
1997-2001	No Harvest in this section									
Shumagin Islands										
1989	0	1	15	79	1	0	0	3	0	2
1990	0	4	0	26	67	2	0	0	0	1
1991	0	0	17	2	30	48	2	0	0	0
1992-95	No Harvest in this section									
1996	0	0	16	73	8	3	0	0	0	0
1997-2001	No Harvest in this section									
Canoe Bay										
1985	0	1	3	81	7	6	1	1	0	1
1986	0	6	0	3	82	6	2	0	1	0
1987	0	25	28	1	5	34	3	3	0	0
1988	0	24	31	20	0	1	16	4	2	1
1989	0	6	56	22	9	0	0	5	1	1
1990	0	23	5	49	17	5	0	0	1	0
1991	0	27	16	1	41	12	2	0	1	0

- Continued -

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Year	Percent at age (Years)									
	2	3	4	5	6	7	8	9	10	11
Canoe Bay										
1992	0	0	6	9	1	55	23	4	0	2
1993	0	21	4	16	9	2	35	11	2	1
1994	0	71	15	1	9	2	1	2	0	0
1995	No samples									
1996 ^b	0	0	0	29	26	5	12	5	3	20
1997-2001	No Harvest in this section									
Pavlof Bay										
1985-86	No samples									
1987	0	6	18	5	11	48	9	2	1	0
1988	0	34	50	5	0	2	7	0	2	0
1989	No samples									
1990-95	No Harvest in this section									
1996 ^b	0	0	0	29	26	5	12	5	3	20
1997-2001	No Harvest in this section									
Lenard Harbor										
1986	0	3	0	3	83	7	4	0	0	0
1987	0	67	5	0	3	25	0	0	0	0
1988-89	No samples									
1990	0	3	2	35	46	6	0	3	6	0
1991-2001	No Harvest in this section									

^a The 1991 and 1993 Stepovak Bay catch was in the northeastern portion of the bay.

^b The samples from Canoe Bay and Pavlof Bay were mixed.

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